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MARCH 1921

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THE EDITOR'S FORUM

CONSTRUCTION ACTIVITY BEGINS

THE long expected turn in construction affairs may confidently be said to have materialized. Evidence of continually strengthening demand, and what is more, evidence of construction actually getting under way, comes from practically all centers.

This is largely due to a belief that liquidation in the building material market has about run its course and that the present retail prices are as near production costs as they can safely go. It is also felt that with any prospect of continued demand for building materials prices will show a tendency to rise, although statisticians make the prediction that after the present building season some further price reductions may be expected. In view of these conditions there are but two courses open to the prospective builder—one to go ahead now and take advantage of present opportunities, and the other to wait. The demand for building space, however, is so great and the assurance of good rental returns for a number of years is so generally expected that the first course will be adopted by many.

The fact that building has already shown a strong tendency toward reviving is noted by the Dow Building Service which covers building conditions in the vicinity of New York. The report of March 5 says:

"With due care to avoid even the appearance of vaporish optimism the Dow Service unqualifiedly proclaims that the long expected turn in the building construction market has come.

"Its regular canvass for building information in New York and vicinity has been supplemented for the purpose of making this survey by an exhaustive questionnaire issued to all departments of the building construction industry and the most conservative conclusion adduced therefrom is that New York has definitely started upon the most active habitation building program of recent times.

"In Manhattan epochal apartment house projects are in process of being forced to early completion. The tax-exemption ordinance has put cheap apartment house and tenement house sites back upon the market with a suddenness that is staggering."

This is further borne out by the building statistics for the month of February as compiled by the F. W. Dodge Co. covering the central and eastern sections of the country. The February figures show a gain of 69% over January, based on reports of building permits from 196 cities and representing a total valuation of $96,493,229. The total number of permits in February, 1921 is larger than that of the corresponding month a year ago but the valuation is smaller, indicating that present activity is less restricted and includes a large proportion of moderate cost work.

OWN YOUR HOME SHOWS

THE one outstanding need today is the construction of new homes, and architects should keep in touch with the more favorable circumstances for home building which are developing steadily. One of the most constructive efforts that is being made to stimulate the early construction of houses is the Own Your Home Expositions which will be held in Chicago during the latter part of March and in New York the latter part of April.

These expositions are arranged to appeal to the popular mind and, through the participation of manufacturers and others interested in the business that will develop from home building, the prospective owner is enabled to see in definite form all of the many materials and appliances that are used in the construction of the modern house.

In connection with the present expositions a feature of particular interest to architects is the competition which has been conducted among architects and draftsmen of the country for designs of 4, 5, and 6-room houses in brick, frame and back-plastered metal lath and stucco construction. The wide interest that was taken in this competition is evident from the 1,200 drawings received.

The jury of award, comprising C. H. Hammond, Chicago; Edwin H. Hewitt, Minneapolis; E. J. Russell, St. Louis; Hal F. Hentz, Atlanta, and Dwight James Baum, New York, awarded these prizes:

Frame Houses

1st prize, Louis Justement, Washington, D. C.
2nd prize, J. Ivan Dise and E. J. Maier, Detroit, Mich.
3rd prize, Edmund F. Jacques, Detroit, Mich.
4th prize, Walter F. Bogner and Carl A. Rehse, Milwaukee, Wis.

Brick Houses

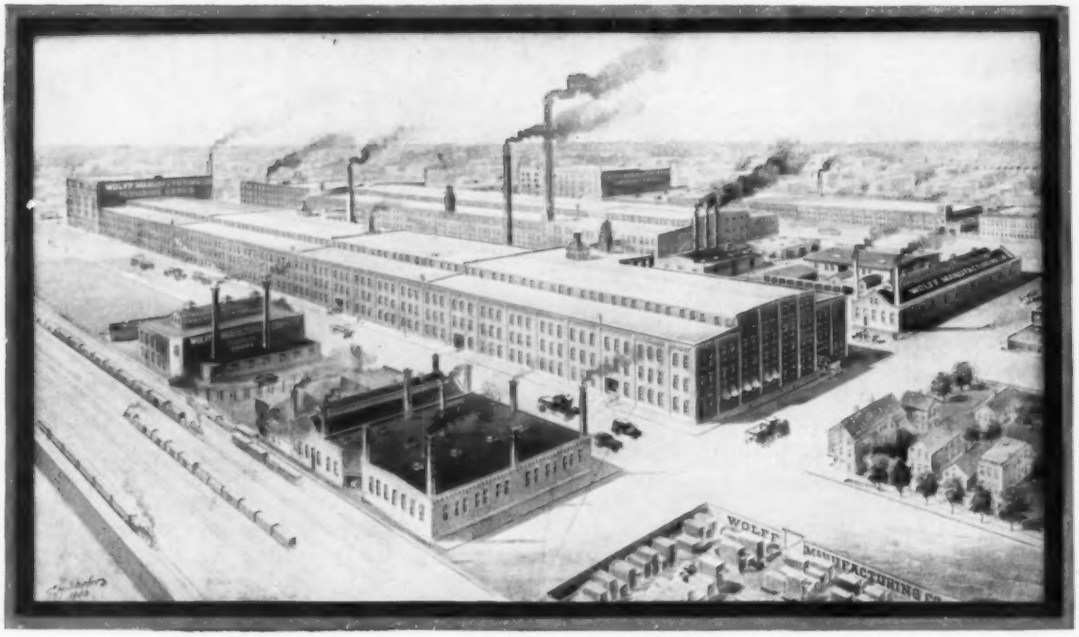
1st prize, Edgar and Verna Cook Salomonsky, New York, N. Y.
2nd prize, John Barnard, Boston, Mass.
3rd prize, Henry F. Stanton and Charles Crombie, Detroit, Mich.
4th prize, Anslie M. Ballantyne, New York, N. Y.

Metal Lath and Stucco Houses

1st prize, Louis Justement, Washington, D. C.
2nd prize, Amedo Leone, Detroit, Mich.
3rd prize, Montgomery & Nibecker, Los Angeles, Calif.
4th prize, Theodore Visscher and James Burley, New York, N. Y.

Group prize designs which were awarded competitors submitting the best house of one classification in each of the materials were awarded to:

John Floyd Yewell, New York City.
J. Ivan Dise and E. J. Maier, Detroit, Mich.
Richard M. Powers, Boston, Mass.



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"Impressions of the Colonial Architecture of Mexico"

CHURCH TOWER, MEXICO CITY

The
ARCHITECTURAL
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VOLUME XXXIV MARCH 1921 NUMBER 3

Villas of the Veneto

II. THE VILLA CERATO AT MONTECCHIO PRECALCINO

By HAROLD DONALDSON EBERLEIN AND ROBERT B. C. M. CARRÈRE

THE Villa Cerato, at Montecchio Precalcino, is an admirable example of a small house in which Palladian formality and dignity are quite as carefully embodied as in a structure of far greater extent. The villa is only 50 feet in breadth by 38 feet in depth. The elevation discloses a basement, a main floor, raised about eight feet above the ground, and an attic or top story, all of them very clearly expressed externally. There are none of the usual dependencies or farm buildings that were apt to be grouped closely around the master's house or to connect with it by an orderly arcaded scheme in Palladian fashion, so that it stands quite alone and unaided by any of those structural adjuncts calculated to dignify the composition. Nevertheless, despite its inconsiderable extent, the villa possesses a character that compels attention and respect.

The villa is close to the road and is approached by a short, straight drive through an unpretentious courtyard to the entrance. This consists of a flight of steps ascending to a shallow loggia entirely without the columns, entablature, or other formal features of architectural embellishment that were customarily employed as accessories in larger Palladian structures. The building is of brick

General View of Main or West Front

CENTRAL PORTION OF WEST FRONT SHOWING BASEMENT ENTRANCE

VILLA CERATO AT MONTECCHIO PRECALCINO, ITALY

Attributed to Andrea Palladio

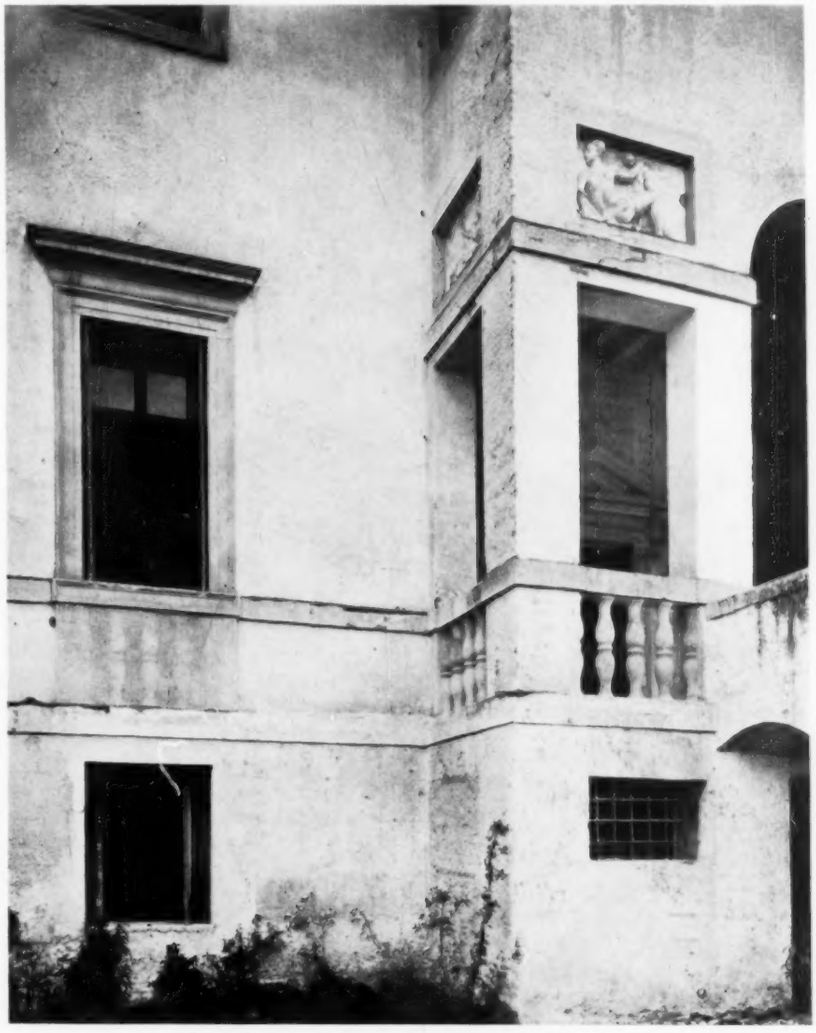
jacketed with stucco and painted a light yellow, which is now very much faded and weather-stained. All the details are fashioned in stucco save the balustrades in the loggia openings, the architrave, frieze and pediment of the doorway, and the sills and architraves of the front windows, which are of stone and, for the most part, delicately wrought. The balusters on the low projections beneath the front windows of the main floor are painted on the plaster, and within the loggia are the half-obliterated remains of frescoes and painted pilasters, fluted and topped with Corinthian caps.

"I approve," wrote Palladio, "that in the lowest part of the fabric, which I make somewhat underground, may be disposed the cellars, the magazines for wood, pantries, kitchens, servants' halls, wash-houses, ovens, and such like things necessary for daily use. From which disposition follow two conveniences, the one, that the upper part remains all free; and the other, no less important, is that the said upper apartments are wholesomer to live in, the floor being at a distance from the damps of the ground; besides, as it rises, it is more agreeable to be looked at, and to look out of." Agreeably to this dictum, all the sundry domestic offices of the Villa Cerato are contained in the basement which, however, is light and airy enough not to cause any serious apprehension on the score of "the damps."

Through the whole depth of the main floor there runs a broad hall, a doorway at the opposite end from the entrance giving on a balcony at the rear, while rooms open out from each side, as will be seen upon examining the plan which has been arranged according to the usual scheme of Palladian design. At either side of this large hall are two lofty and spacious apartments, those upon the front being the larger. Between the two rooms upon the right are two tiny *gabinetti*—possibly intended for sleeping closets—a passage, and a small, insignificant stair leading down to the domestic office in the basement and up to the attic story. The ceilings of the hall and of the other rooms are beamed and painted.

The obvious insignificance of the stair seems attributable to the purpose for which the attic story is said, in this instance, to have been designed—a granary and storage place, and not for occupancy by members of the household. The Palladian dictum that "the staircases will be commendable if they are clear, ample and commodious to ascend, inviting, as it were, people to go up," was plainly disregarded in this instance, and there is not any of that degree of seemliness which it was the Palladian habit to accord even to staircases that were not meant to figure as conspicuous features in the architectural composition.

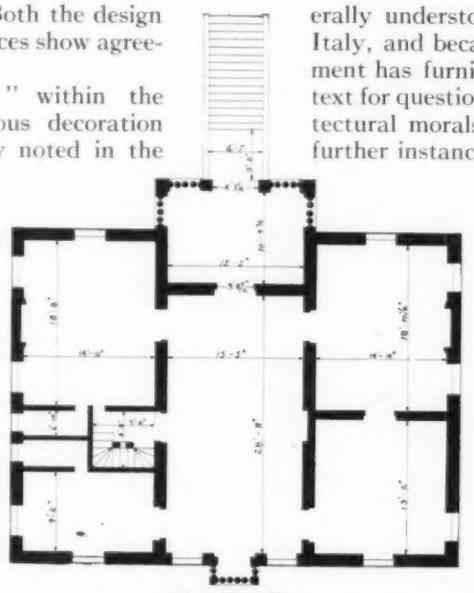
The fireplaces in the two front rooms are of an unusual and striking design that cannot fail to elicit interest. The fact that the chimney-jamb assumes a bulbous form, which narrows and recedes upward until it is absorbed in the wall surface, yields a certain degree of decorative function in the contour and, indeed, almost precludes the possibility of further applying any appropriate ornament. The painting of the walls and of the stone fireplaces is, of course, a modern defacement, perpetrated since the villa has been tenanted by two



Stucco Detail and Painted Architecture on Main Front

or three *contadini* families. Both the design and the execution of the fireplaces show agreeable delicacy and restraint.

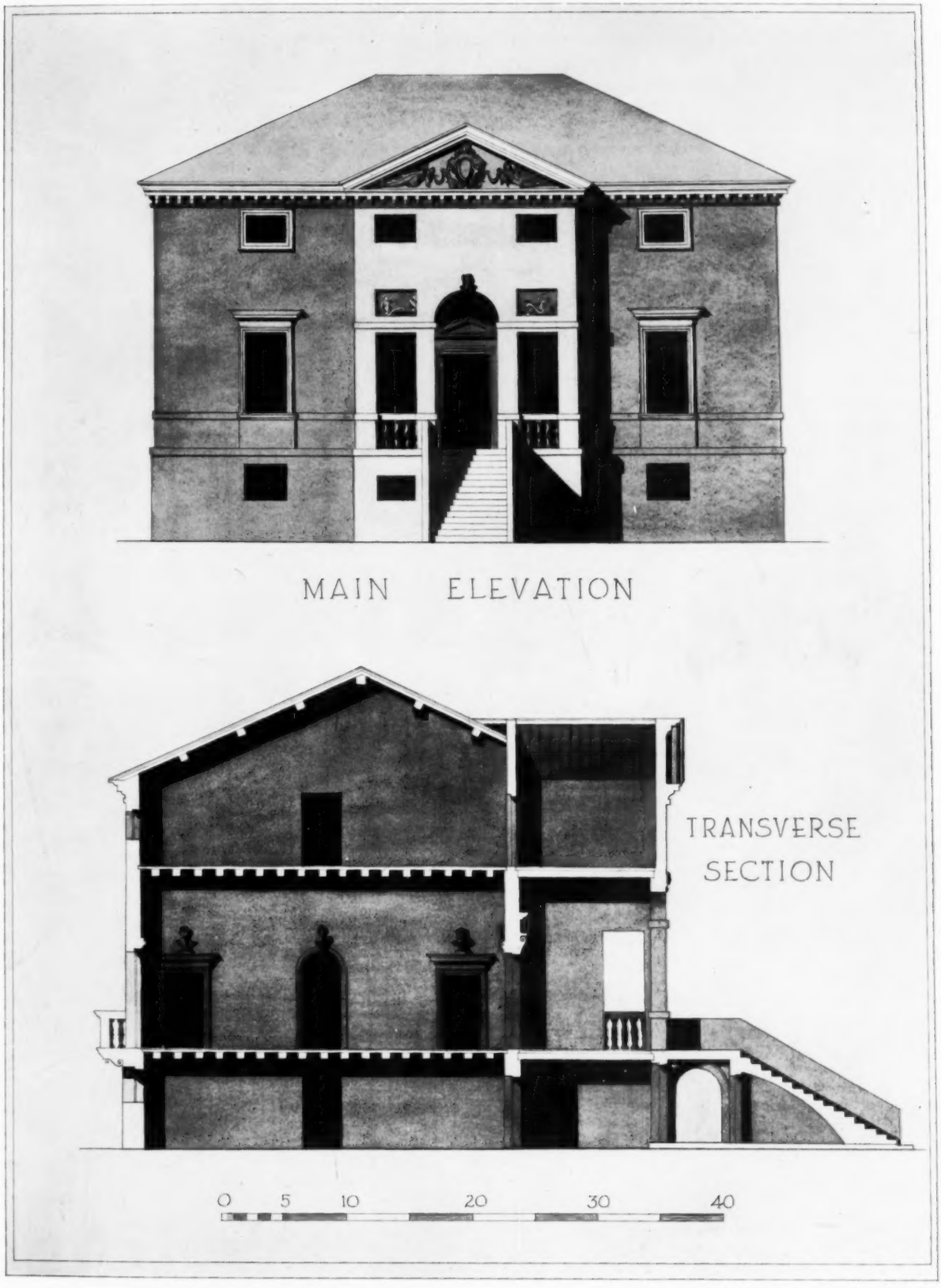
The "painted architecture" within the loggia is a much less ambitious decoration of the sort we have already noted in the loggia and in the *sala* of the Villa Emo at Fanzolo, executed by Paolo Veronese and "Messer Battista Venetiano," and shown in THE FORUM for January. The "painted architecture" of the Villa Cerato, both in loggia and the balusters indicated beneath the front windows of the main floor, is almost obliterated, but it deserves to be noticed because its presence involves a principle that is not generally understood or appreciated outside of Italy, and because this method of embellishment has furnished hostile critics with a pretext for questioning Italian sincerity and architectural morals. As we shall frequently meet further instances of this same thing, the moral significance may as well be dealt with now, even at the risk of giving the subject relatively undue importance so far as the amount of painting in the Villa Cerato is concerned.



Main Floor Plan

Balcony on Rear or East Front

Few, it is true, at this late day would subscribe without reservation to Mr. Ruskin's fulminations against the "foul torrent of the renaissance" or agree with him that renaissance architecture "is base, unnatural, unfruitful, unenjoyable and impious." Nor would they listen with much patience or sympathy to his rhetorical invective when he prophesies that "whatever has any connection with the five orders, or with any one of the orders; whatever is Doric, or Ionic, or Corinthian, or composite, or in any way Grecised or Romanised; whatever betrays the smallest respect for Vitruvian laws or conformity with Palladian work—that we are to endure no more." Nevertheless, there are those —and they are far more numerous than one might at first imagine—who profess admiration for Palladian work in the aggregate, pride themselves upon a discriminating taste in the niceties of Palladianism, and are given to practicing Palladian principles, but who take occasion to carp at certain practices of the Palladian age because they have inherited — perhaps without knowing it — something of Ruskin's mental bias. Into their canons of criticism they inject an "ethical" element and evince an animus against this, that, or the other particular practice which they stigmatize as "immoral" and attack it with a bitterness



VILLA CERATO AT MONTECCHIO PRECALCINO, ITALY
MEASURED DRAWINGS BY ROBERT B. C. M. CARRÈRE

that savors of theological rancor. "Painted architecture" is one of the favorite objects of this *odium theologicum*. Having introduced moral judgment and moral values, they proceed to brand "painted architecture" as deception and falsity, when no deception was intended or even thought of.

It takes two parties to create a deception—the deceiver and the deceived—as Geoffrey Scott puts it, in his stimulating "Architecture of Humanism":

"The harmfulness of deceit lies, it must be supposed, either as a quality in the will of the deceiver or in the damage inflicted by the deceit. If, in discharge of a debt, a man were to give me instead of a sovereign a gilded farthing, he would fail, no doubt, of his promise, which was to give me the value of twenty shillings. To deceive me was essential to his plan and the desire to do so implied in his attempt. But if, when I have lent him nothing, he were to give me a gilt farthing because I wanted something bright, and because he could not afford the sovereign and must give me the bright farthing or nothing bright at all, then, though the coin might be a false sovereign, there is evidently neither evil nor injury. There is no failure of promise because no promise has been made. There is a false coin which, incidentally, may 'deceive' me; but there is no damage and no implied determination to deceive, because what I required in this case was not a sovereign but the visible effect of a sovereign, and that he proposed to give—and gave."

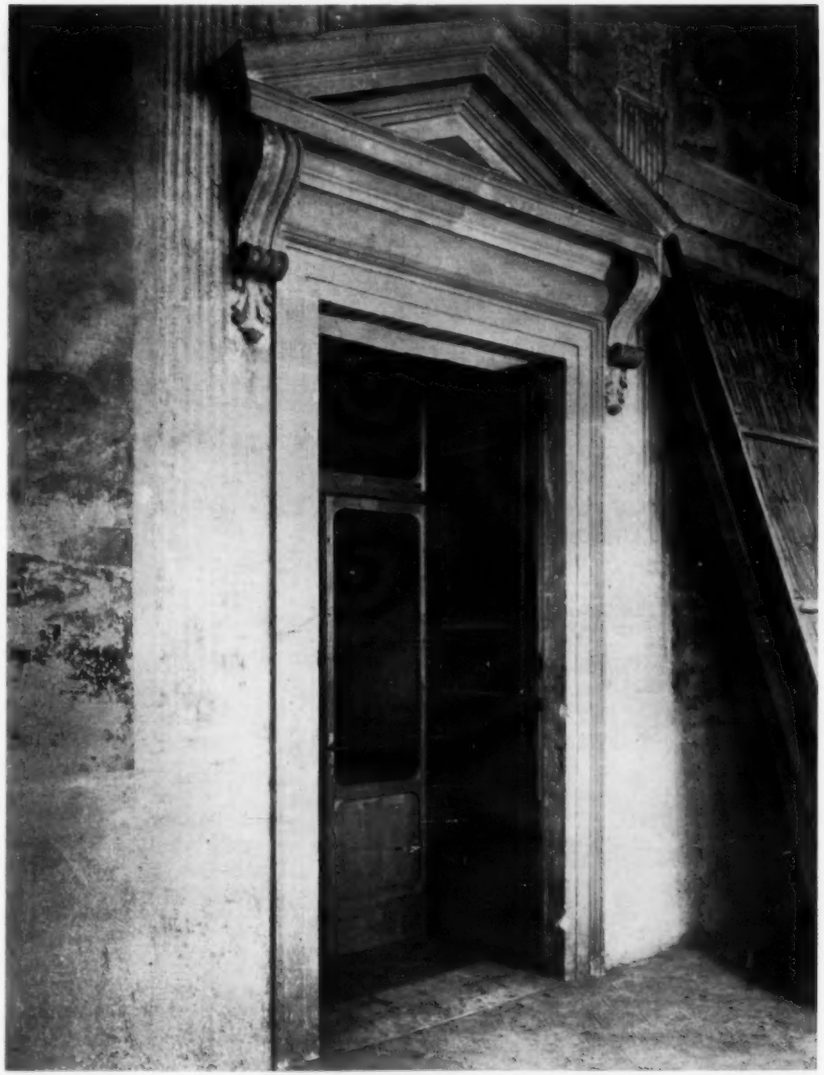
Hallway on Main Floor

Fireplace in Northwest Room

Probably no man is persuaded into believing that the false window of a renaissance front is real, and the more familiar he is with renaissance architecture the less likely is he to believe it; but neither does he wish to believe it, nor does it matter if, by chance, he is persuaded. The window is wanted for the sake of the balance it can give to the design. Deceit is absent because the facts are patent and easy to discover. "Ruskin was not more disappointed than Palladio that the palaces of Vicenza are of stucco." Few generations were more fully aware of the valuable qualities of rich material, but the architects of that period set values "in the scale of their importance, and when economic or other barriers stood in their way, preferred at least, and foremost, to indicate *design*." This brave impressionism satisfied the eye, and if the mind was deluded at all, it was merrily and only for a moment.

An ingenuous spectator who finds so much naively devised for his delight

PAINTED ARCHITECTURE ON WALL OF ENTRANCE LOGGIA



DOORWAY TO HALL FROM ENTRANCE LOGGIA

VILLA CERATO AT MONTECCHIO PRECALCINO, ITALY

will no more complain of all these "substitutes—these false perspectives and painted shadows"—than grow indignant because, in the Greek cornice, he is shown false eggs and darts. Imitation runs through art; when we have imitated in one way long enough, our convention is accepted as such. The egg and dart moulding is a convention.

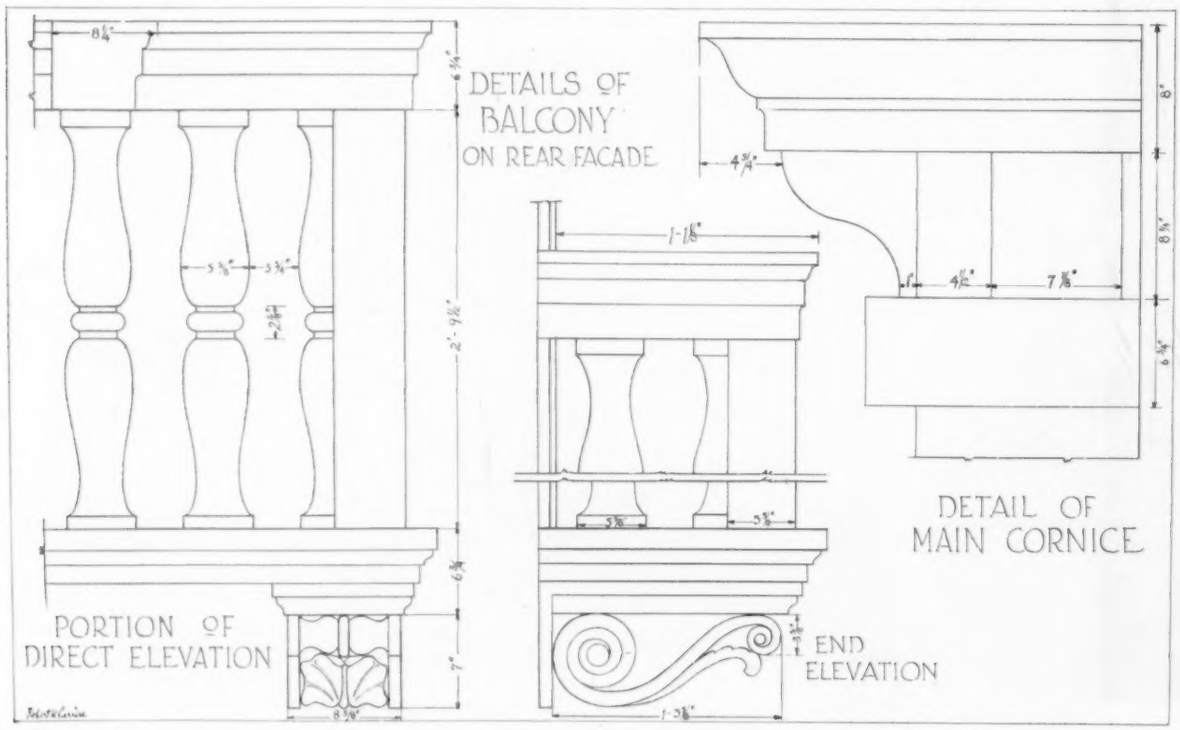
All of this applies directly to the case in point. The pleasant architectural features and adjuncts that conditions made it impossible to realize in the round, the architects of the period contented themselves with indicating in the flat—executed in paint. When they could not have the palpable, three-dimensional reality, in lieu of it they grasped the two-dimensional substitute.

In other words, "painted architecture," and the accompaniments that often went with it, are to be reckoned a conventional amenity that ministered to a sense of composition and to the imagination, often as an earnest of the architect's intentions unfulfilled and, for various reasons, unfulfillable. The fact of its existence deceived nobody. Whether we like it or not is a matter of taste, not morals. As such, our countenance or our disapproval must rest on the score of taste, not on the score of morality. Furthermore, the metamorphosis from three to two dimensions places the subject of contention in the realm of decoration and virtually removes it from that of architecture, in its strictest interpretation, so that it is manifestly inappropriate to apply to it strict architectural standards. And the fact remains, from whatever angle we choose to view it, that the "painted architecture" in the loggia of the Villa Cerato affords an element of interest and concrete imaginative suggestion; without it the loggia would have been dull and barren.

There is no documentary proof that the Villa Cerato is the work of Palladio. If not, it is nevertheless unquestionably the work of a careful adherent of his school. But the presumptive evidence in favor of its being Palladio's own work is strong. It is known that Palladio was working in the immediate neighborhood and designed a small house for Count Schio at Montecchio, between which and the Villa Cerato there is a marked similarity, although the points of difference are quite sufficient to give each its own strongly individual character.

In alluding to the lack of documentary proof of its being Palladio's personal work, Scamozzi points out that in going from the *sala* "to the stairs, one passes through an arched door without impost which does not seem . . . in the taste of Palladio." Nevertheless, "struck by the air of grandeur which shews in all its parts, and which one always observes in the buildings of our Architect," he adds that "the simplicity of this *palazzino*, along with its elegance, and its commodious internal arrangement, make it so admired of the connoisseurs that many of them without hesitation regard it as one of the many products of Palladio." To this attribution his own personal belief inclined him.

If the villa be really one of Palladio's own compositions, as seems more than likely, it is interesting to note in the lintel and arch treatment of the loggia an approximation to the so-called Palladian motif—which Palladio did not originate, and which he employed only rarely.



Impressions of the Colonial Architecture of Mexico

PART II

By WALTER H. KILHAM

THE size and architectural importance of the secular buildings erected by the Spaniards during the colonial period come as a surprise to most Americans.

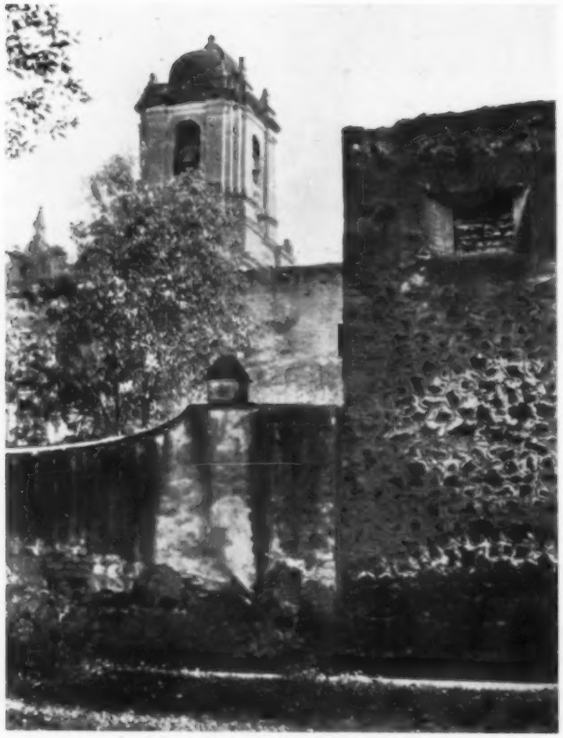
These palaces are not unworthy to rank in many ways with corresponding buildings in Toledo or Burgos. They generally consist of two lofty stories, the walls being faced with the pink and porous lava scum known as *tezontle* and trimmed with a hard but well-textured light gray stone which around the main doorways is carved in intricate and imposing detail. The window trim of the second stories is continued to the cornice, enclosing a sort of transom panel which becomes a typically Mexican motif and in the cases of palaces of the high nobility the parapet is surmounted by heraldic turrets which proclaim the rank of the master. Projecting spouts throw the roof water clear of the walls, and here and there an almost forgotten Captain general has availed himself of the privilege of his rank and carved them in the form of a cannon, sometimes complete with wheels and trunnions. The great portal with its amazingly carved wooden door opens into the patio which is surrounded by imposing stone arcades which lead to a magnificent stone stairway at the rear. The skill of the ancient masons is attested by the remarkable *tour de force* in the patio of the building now used as the National School of Medicine in Mexico City where the corner pillars of the lower arcade are entirely omitted, the upper gallery being carried by stone arches concealed in the groining. Another skillful piece of masonry is the self-supporting stone stairway in one of the courts of the National Palace, which if it stood in Spain or Italy would long since have been measured and published a dozen times over.

Ancient Shrine, Mexico City

Mention should be made, though the subject deserves a longer discussion, of the curious and frequently beautiful stucco decoration in diaper patterns of the outside walls of many of the older buildings, possibly a survival from the Aztec, but more probably of Moorish origin. This work survives in many of the older houses, but in the more costly palaces it was superseded by the *tezontle* facing which became very popular.

The broad causeways which lead southerly across the level valley from Mexico City reach the foothills of the Ajusco range after ten or twelve miles. The seeker for architectural interest as well as local color will find the walk along the old highroad which skirts the base of the hills from San Angel through Coyoacan and Churubusco to Xochimilco a continual delight as it winds between groves of towering cypress and eucalyptus which overtop the long perspectives of time stained walls, and through the shady plazas of ancient villages full of one-story villas overgrown with yellow roses and purple bougainvillea. Past these antique mansions and over this same road where the patient little donkeys trudge with their pack loads of raw hides, maize or brushwood, once fled the disorganized troops of Santa Anna and Valencia before the terrible artillery of Scott and Pillow.

In the nearby convent of San Pablo of Churubusco, where massive rose and yellow belfry now looks out over the peaceful cornfields and pleasant village gardens, General Rincon made his desperate but ineffectual stand. It is



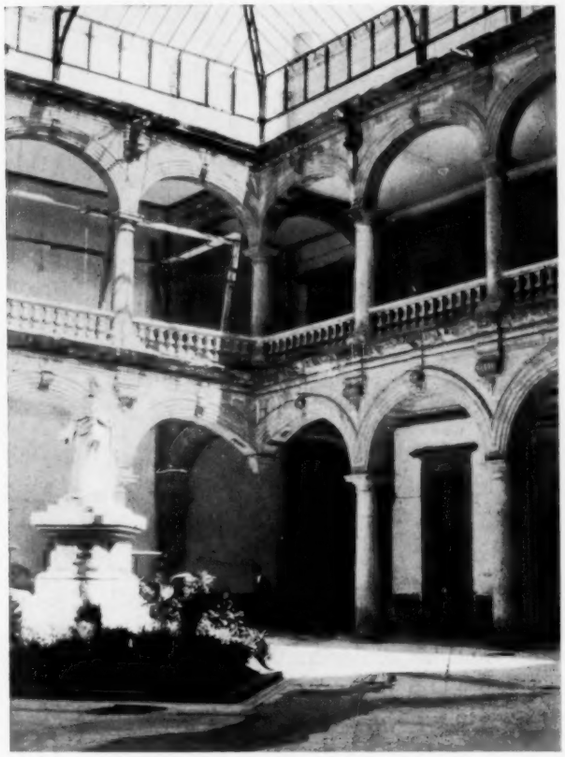
Convent of San Pablo, Churubusco

related that the white haired old General, watching the struggle from the bell tower, had his professional admiration so aroused by the splendid way in which the American troops carried the *tete de pont* a short distance away that, forgetting the desperate plight of his own men, he waved his cap and actually cheered the invaders—a truly story book example of Latin chivalry. Here at Coyoacan is a fine example of the Mexican idea of a "village" church—many domed, solid and eternal. From its roof you can look into the dark, glossy foliage of old walled gardens, watered by gurgling rivulets and across flat roofs where very likely you will spy somewhere a houseboy imitating a bull fight

Corner Treatment of a Spanish Palace

The Lower Steps at Guadalupe Hidalgo

with a red table cloth, to the snowy Popocatepetl or the frowning Ajusco. Or, if one follows the northern causeway out of the great square of the city, one comes in three miles to Guadalupe Hidalgo, the scene of a miraculous apparition of the Virgin, the resort of thousands of pious Indian pilgrims from all over Mexico who at any and all times turn



Patio in School of Medicine, Mexico City

A Street in San Angel

its streets into a panorama of color that would be the despair of any opera producer in the world. Here is the finest jewel of colonial architecture, the *Capilla del Pocito*, the Chapel of the Little Well, with its elliptical pink walls and blue and white domes, its windows blazing in brilliant detail like military decorations, and faced across the little

The Market Place at Guadalupe Hidalgo

square by blue and yellow *pulquerias* at the base of the famous steps of Tepeyac. The great church of Guadalupe, *La Colegiata*, is a real masterpiece for any country, with a fine interior, which even the unfortunate frescoes cannot quite spoil, and a highly impressive array of towers and domes, although the genuine silver railings of the altar and balconies probably carry a more direct message to the unsophisticated devotees.

"In liquid syllables the cries
Of far fruit vendors faintly rise;
And under thick palmetto shades,
And down cool covered colonnades,
The tides of traffic gently flow,
In Mexico."

One will look in vain for any important vestiges of Aztec influence on the more important examples of Mexican architecture; in fact the imported signs of Moorish influence in Spain are by far more numerous. The spiral terminations of parapets and sometimes of water tables must recall the serpent like carvings of the native work, and here and there a detail of window or finial dimly suggests an Aztec origin, but in general Spain was contented, in Mexico at least, to bring to the new country "her cross and her sorrows" and, rather than adapt the native architecture to her uses, was content to utilize the existing types of the already beautiful and dignified Spanish renaissance of Leon and Castile.

Doorway of the "Capilla del Pocito"

"Capilla del Pocito" (Chapel of the Little Well) at Guadalupe Hidalgo

An account of Mexican architecture would not be complete without mention of the celebrated sculptor and architect, Manuel Tolsa, who after achieving high distinction in Madrid sailed for Mexico in 1791. His most important work, the vast pile of the *Mineria* or School of Mines, is a good and simple design, but began soon after its erection to crack and sink into the oozy subsoil which underlies the entire city. A more successful, and in some ways more remarkable, work is his great equestrian statue of Carlos IV, known locally as the "Iron Horse," which weighs 30 tons and was cast in one piece in Mexico in 1802, long before anything of the sort had been attempted in the United States. This statue, which stands at the junction of three important avenues, is really fine work, judged by any standard, and is appreciated by the Mexicans who, as good republicans and in order that no mistake be made, have added to the inscription the words, "Mexico preserves it as a work of art." Tolsa is an important architectural asset in the art gossip of Mexico, and any particularly good minor object of art, from a candlestick to a centerpiece, is generally credited to him.

The stormy history of the Mexican republic since its independence has prevented, except during the administration of Presi-

dent Diaz, and perhaps that of Maximilian, as much important work being carried out as would otherwise have been the case. Under the brilliant sway of Don Porfirio, however, a good many very important buildings were begun and some were finished, which may perhaps form the subject of a later article. From the earliest times, however, the treacherous subsoil under the capital, the old bed of the partially drained lakes of the valley of Mexico, has proved a stumbling block in the way of all building operations. All the ancient buildings which were not built on the original islands have settled to a considerable extent, in some cases even as much as two meters, which results in some amusing effects which can scarcely be equaled elsewhere. It is a local saying that the principal downtown theater of Mexico City stands on top of two others which have disappeared from view, while the unfinished National Theater, which was designed to be approached by an imposing flight of steps, has settled from six to eight feet so that a sort of sunken garden will have to be devised for its main entrance at the time of completion.

In case these papers have so fired the imagination of any architectural confrere as to make him want to seize his water color box and three-legged stool and start for the Rio Grande, I will add that a train leaves the frontier every day, that the people are courteous and entertaining, the oranges and *frijoles* are perfect, and *cerveza* (beer) of excellent make is at once available, not to mention more fiery and less wholesome beverages. Terry's Guide, made in the exact image of Baedeker, is invaluable, but Flandrau's "*Viva Mexico*" should be read and re-read for its inimitable local color. The delicious memoirs of the sprightly Madame Calderon de la Barca (what an asset she must have been to any country!), written in 1839–40, are exactly as fresh now as when first put on paper. Perhaps I cannot better terminate this article than by a liberal quotation from one of her letters:

"If anyone wishes to try the effect of strong contrast, let him come direct from the United States to this country; but it is in the villages especially that the contrast is most striking. Traveling in New England, for example, we arrive at a small and flourishing village. We see four new churches, proclaiming four different sects; religion suited to all customers. These wooden churches or meeting houses are all new, all painted white, or perhaps a bright red. Hard by is a tavern with a green paling, as clean and as new as the churches, and there are also various smart stores and neat dwelling houses; all new, all wooden, all clean, and all ornamented with slight Grecian pillars. The whole has a cheerful, trim, and flourishing aspect. Houses, churches, stores, and taverns, all are of a piece. They are suited to the present emergency, whatever that may be, though they will never make fine ruins. Everything proclaims prosperity, equality, consistency; the past forgotten, the present all in all, and the future taking care of itself. No delicate attentions to posterity, who can never pay its debts. No beggars. If a man has even a hole in his coat, he must be lately from the Emerald Isle.

"Transport yourself in imagination from this New England village to that of . . . . it matters not which, not far from Mexico. 'Look on this picture, and on that. The Indian huts, with their half-naked inmates, and little gardens full of flowers; the huts themselves either built of clay or the half-ruined *beaux restes* of some stone building. At a little distance a *hacienda*, like a deserted palace, built of solid masonry, with its inner patio surrounded by thick stone pillars, with great walls and

"La Colegiata" at Guadalupe Hidalgo

iron-barred windows that might stand a siege. Here a ruined arch and cross, so solidly built that one cannot but wonder how the stones ever crumbled away. There, rising in the midst of old, faithful looking trees, the church, gray and ancient, but strong as if designed for eternity; with its saints and virgins, and martyrs and relics, its gold and silver and precious stones, whose value would buy up all the spare lots in the New England village; the *lepero*, with scarce a rag to cover him, kneeling on the marble pavement. Leave the enclosure of the church; observe the stone wall that bounds the road for more than a mile; the fruit trees overtopping it, high though it be, with their loaded branches. This is the convent orchard. And that great Gothic pile of buildings, that stands in hoary majesty, surmounted by the lofty mountains, whose cloud-enveloped summits, tinged by the evening sun, rise behind it; what could so noble a building be but the monastery, perhaps of the Carmelites, because of its exceeding rich garden, and well chosen site, for they, of all monks, are richest in this world's goods. Also we may see the reverend old prior riding slowly from under the arched gate up the village lanes, the Indians coming from their huts to do him lowly reverence as he passes. Here, everything reminds us of the past; of the conquering Spaniards, who seemed to build for eternity; impressing each work with their own solid, grave, and religious character; of the triumphs of Catholicism; and of the Indians when Cortez first startled them from their repose, and stood before them like the fulfillment of a half-forgotten prophecy. It is in the present that seems like a dream, a pale reflection of the past. All is decaying and growing fainter and men seem trusting to some unknown future which they may never see. One government has been abandoned, and there is none in its place. One revolution follows another, yet the remedy is not found. Let them beware lest, half a century later, they be awakened from their delusion, and find the cathedral turned into a meeting house, and all painted white; the railing melted down; the silver transformed into dollars; the Virgin's jewels sold to the highest bidder; the floor washed (which would do it no harm), and round the whole, a nice new wooden paling, freshly done in green—and all this performed by some of the artists from the wide-awake republic farther north."

Let us hope, however, that the day is far distant when the skyscraper and the "5 and 10," not to mention the soda fountain and the armchair lunch, invade these quiet old streets, and that the work of the Mexican builders may long remain as an example, inspiration and delight to the northern "artists" who may find their way across the Rio Grande in search of things pictorial.

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Old Church at Churubusco

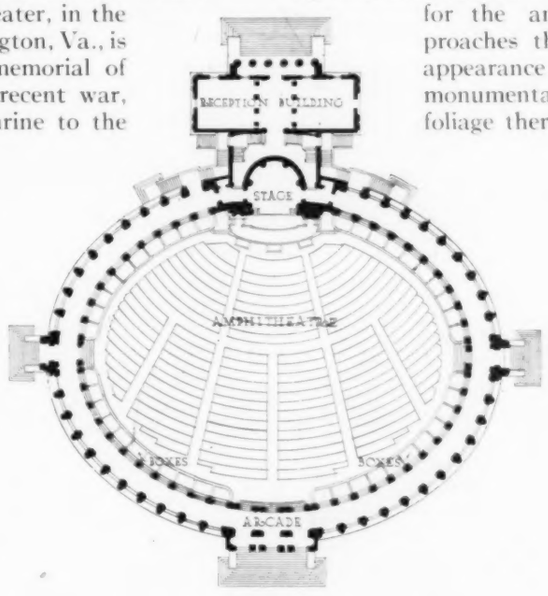
The Arlington Memorial Amphitheater

A TRIBUTE TO AMERICAN SOLDIERS AND SAILORS IN THE NATIONAL CEMETERY

CARRÈRE & HASTINGS, ARCHITECTS

THE discussion of war memorials for commemoration by state or nation of those who fell in the world war has not thus far produced much which would indicate the form which such memorials may be expected to take, or the tendency of popular taste in work of such a nature. Such monuments as have already been instituted are chiefly of a private or local character which would give but little indication of what might be expected of a memorial of a very much broader nature.

The Memorial Amphitheater, in the National Cemetery at Arlington, Va., is something more than a memorial of those who fought in the recent war, being rather a national shrine to the memory of all Americans, whether soldiers or sailors, who have fallen in the various wars in which the United States has been engaged. This memorial, as is fitting, has been placed in the cemetery which possibly more than any other one spot is associated with the memory of the nation's sons who, whether on land or sea, have died in its defense. The monument has taken the form of a great amphitheater in which gatherings of an appropriate patriotic or commemorative nature may be held, together with such accessory buildings and other adjuncts as the use of such an amphitheater would naturally involve.



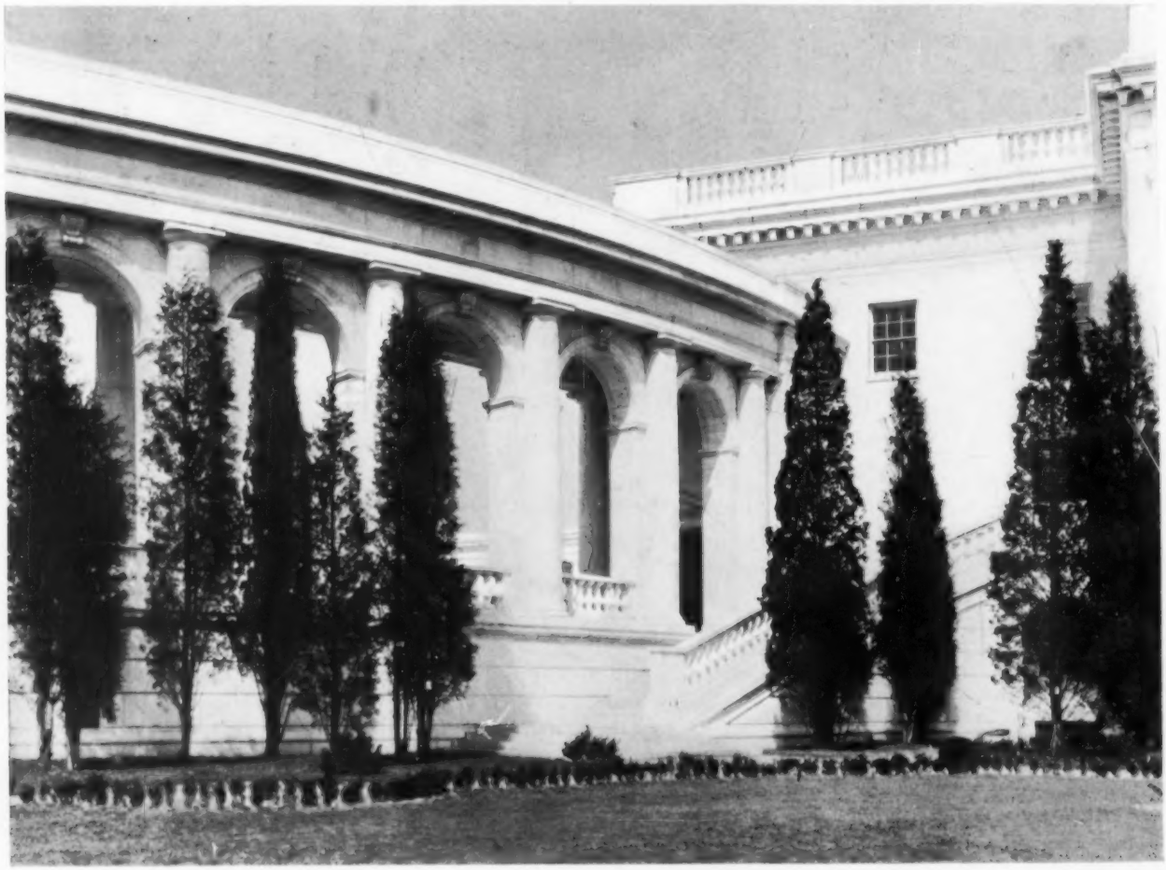
General Plan

The memorial has been given an excellent setting not far from the Maine monument and is approached from the Potomac River by a wide roadway which divides immediately in front of the building and surmounts the terrace which forms a base for the amphitheater. As one approaches the memorial it presents an appearance which is impressive and monumental. Against a background of foliage there stands the retaining wall of the terrace and just above appears the reception pavilion with its classical portico at the sides of which appear the columns and arches which surround the amphitheater proper and which are united at the opposite side by a monumental entrance from which leads a flight of marble steps.

Within the entrance portico is a sculptured frieze showing trophies of war and other symbols. The interior of

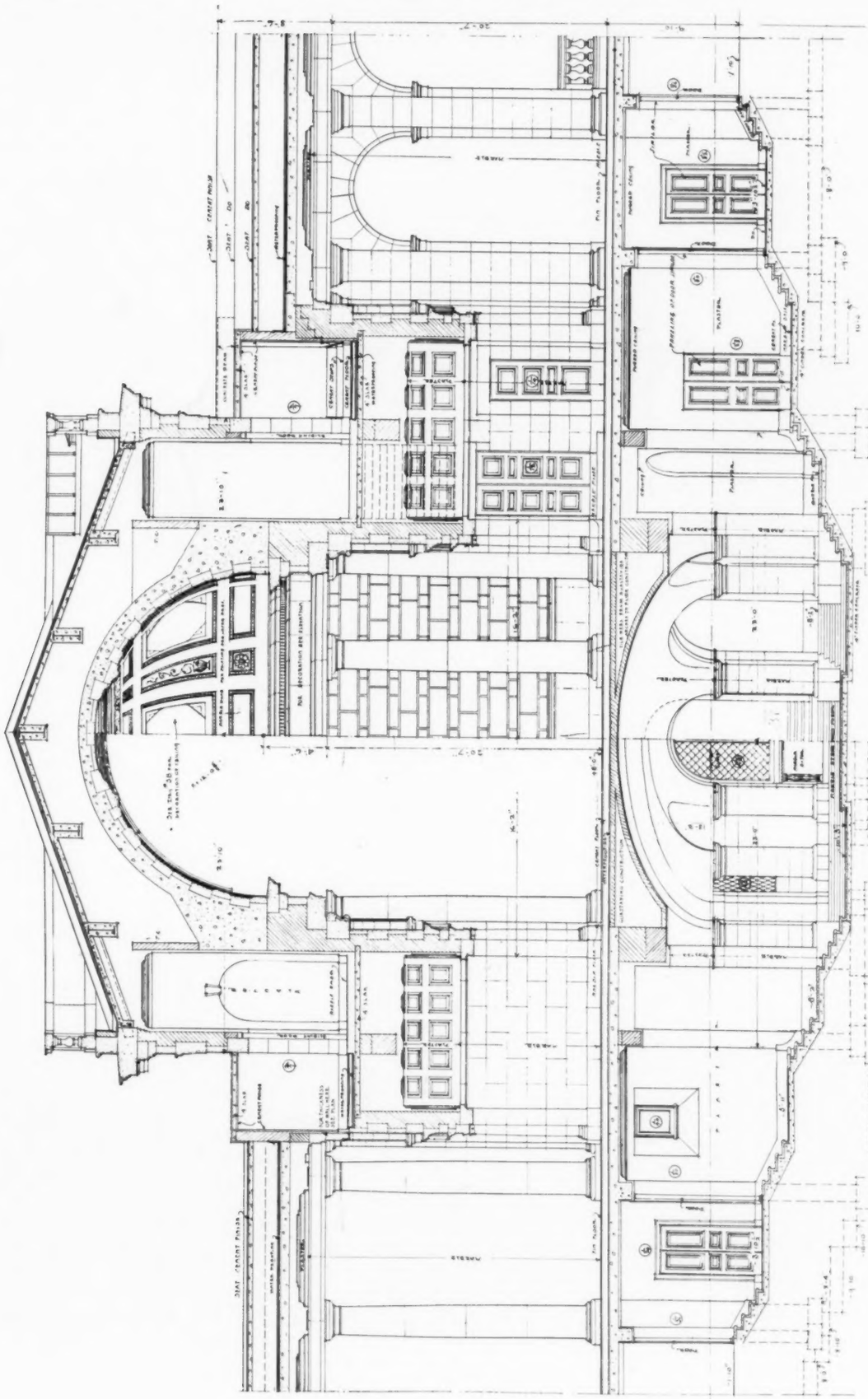
Arcade and Amphitheater Entrance Opposite Stage

DETAIL OF FRONT OPPOSITE STAGE

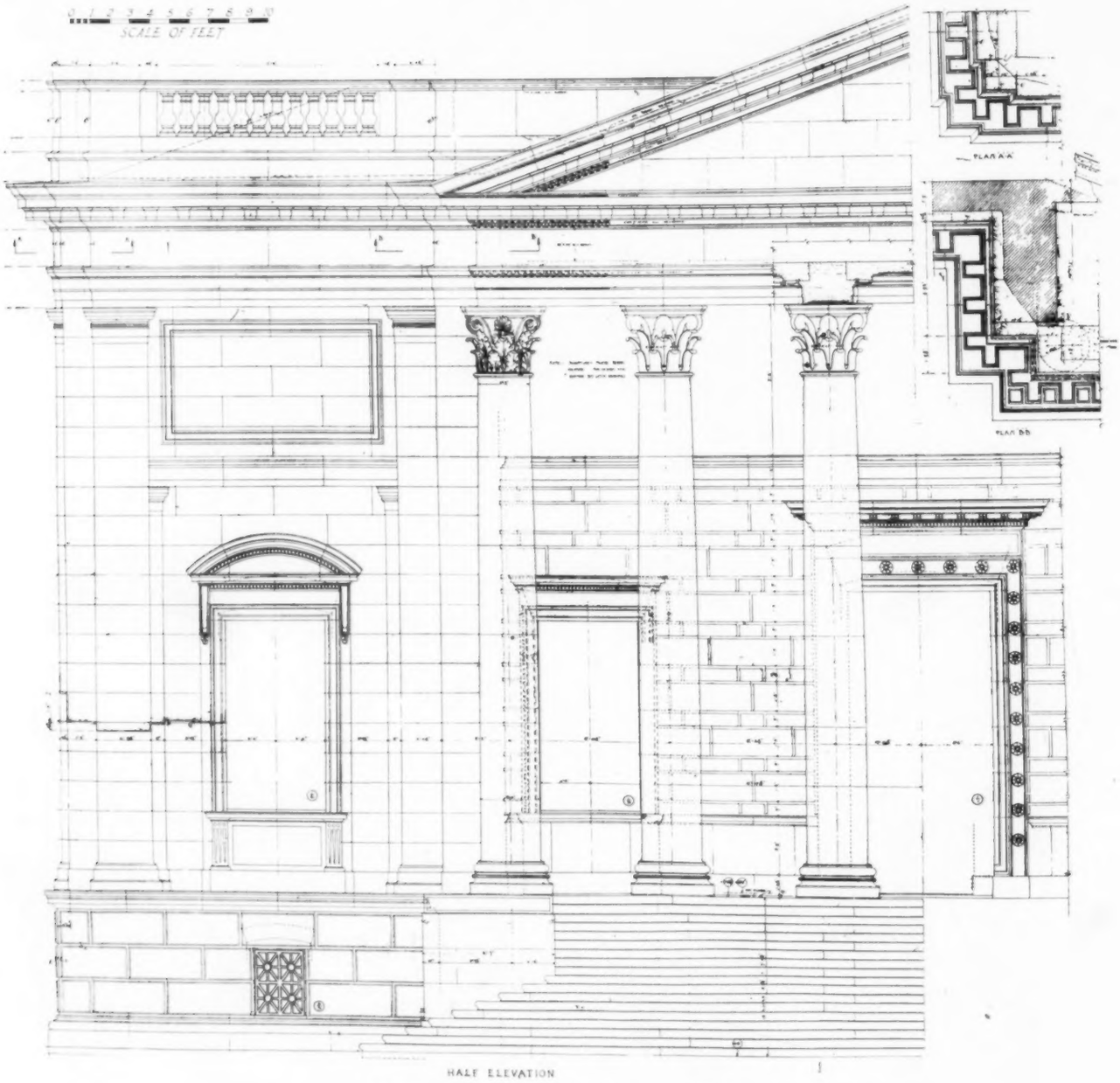


JUNCTION OF ARCADE AT STAGE

THE ARLINGTON MEMORIAL AMPHITHEATER, ARLINGTON, VA.



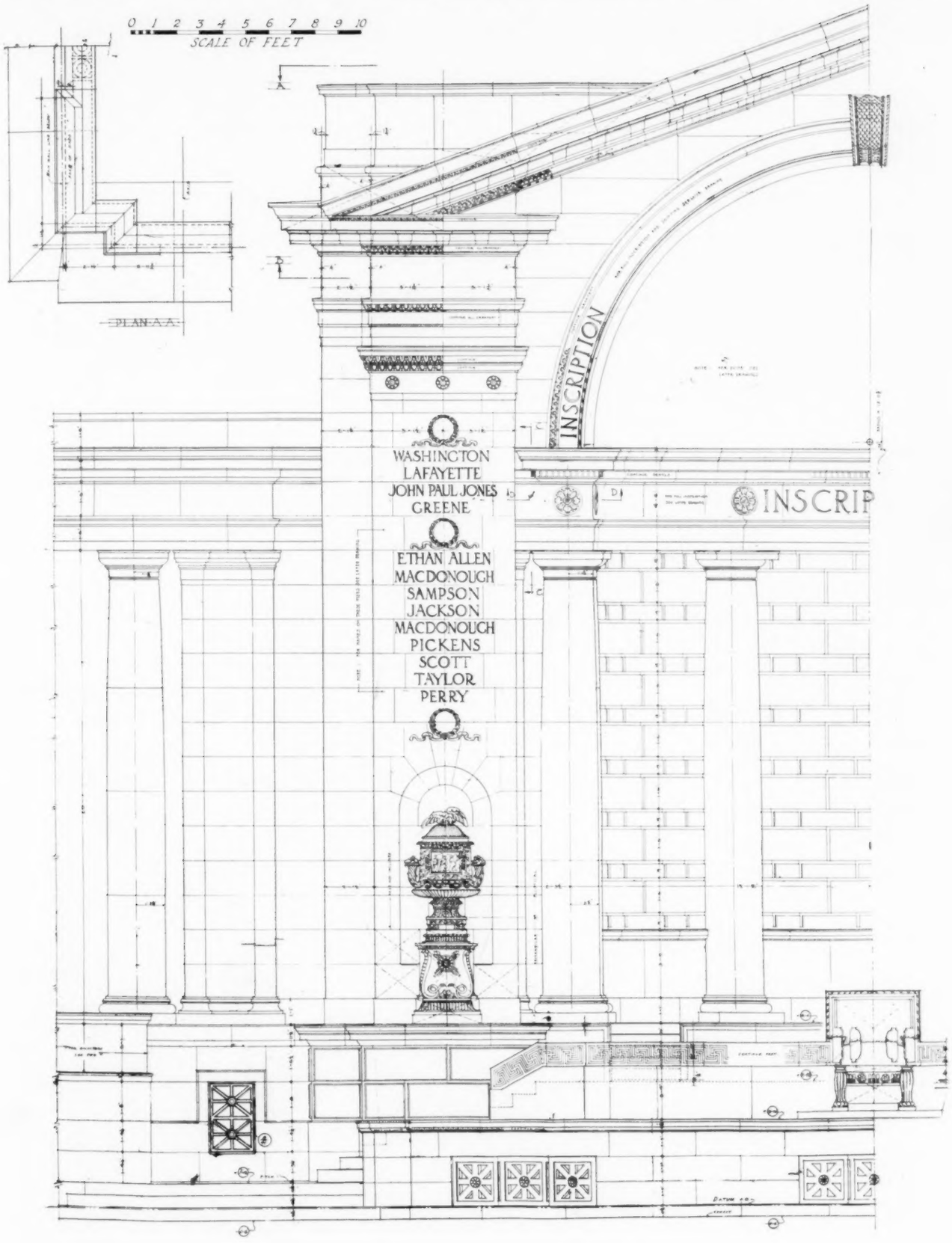
SECTION THROUGH CHAPEL AND STAGE ON AXIS OF ARCADE, ARLINGTON MEMORIAL AMPHITHEATER, ARLINGTON, VA.
CARRERE & HASTINGS, ARCHITECTS



Half Elevation of Main Facade of Reception Building

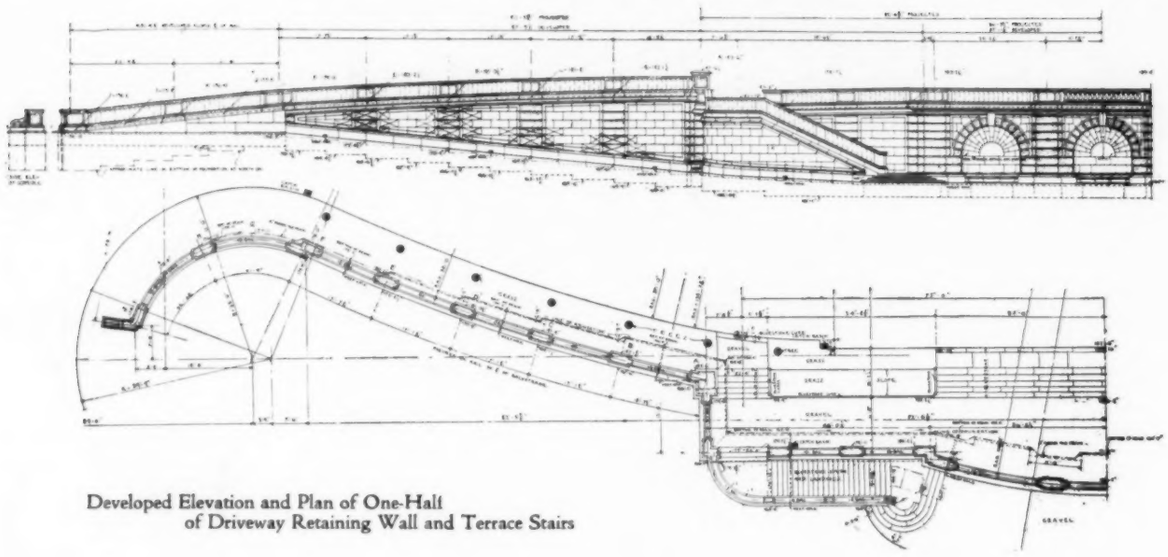
the reception pavilion is a great room faced with white marble and with a gallery at either side supported upon marble columns. This reception hall, or gallery, is intended to serve as a place for the entertainment of distinguished visitors upon suitable occasions and for the exhibition of battle flags, portraits and other trophies and relics. Since it may be necessary at times to use the reception hall for gatherings of a somewhat different nature provision has been made for serving luncheons and the necessary kitchens and service rooms are installed. Just beyond are corridors and stairways leading to the stage of the amphitheater proper. The stage is semi-circular in form and is covered with a half-dome roof which is richly carved. On either side are piers upon which are inscribed the names of eminent warriors. Appropriate inscriptions are cut upon the frieze around the stage and also upon the arch facing the amphitheater. The stage is built upon three levels and will seat almost 100 people. Beneath the stage is a mortuary chapel with a domed ceiling and raised ambulatory. It is intended that this chapel shall be sometimes used for funerals or commemorative services when the number of people attending is not large, and it has been arranged to seat 150.

The arcade which is a striking feature of the memorial as seen from the approach encircles the amphitheater which is elliptical in form. Marble benches will seat 4,000 and in the boxes within the



HALF ELEVATION OF STAGE, ARLINGTON MEMORIAL AMPHITHEATER, ARLINGTON, VA.

CARRÈRE & HASTINGS, ARCHITECTS



Developed Elevation and Plan of One-Half
of Driveway Retaining Wall and Terrace Stairs

bays of the arcade 500 more may be seated; the arcade also allows standing room for about 1,000 so that some 5,500 people in all may be accommodated at one time. Beneath this encircling arcade there are 300 crypts in which are to be placed the remains of the nation's distinguished soldiers and sailors. In front of each crypt and in the pavement of the arcade directly above will be inscribed the names of those buried there. Upon the outer cornice of the arcade there are 44 panels in each of which is inscribed the name of some important battle in which the army or navy of the United States has been engaged, beginning with the early battles of the revolutionary war and including the most important engagements of the war just ended.

In the construction of the Memorial Amphitheater care has been exercised in selecting the best qualities of materials and making use of the most approved methods of building. Foundations throughout have been laid of concrete and brick with steel used as reinforcement, and steel has also been employed in building the floors and roof of the reception pavilion. The retaining wall, which faces the Potomac River and which extends across the main front of the memorial, is faced with granite from the Fox Island quarries and the exterior of the building proper and the encircling arcade or colonnade is built of marble from the quarries at Danby, Vt., carefully selected for its whiteness and even texture. For interior construction considerable use has been made of Botticino marble in floors, columns and cornices and in certain other instances.

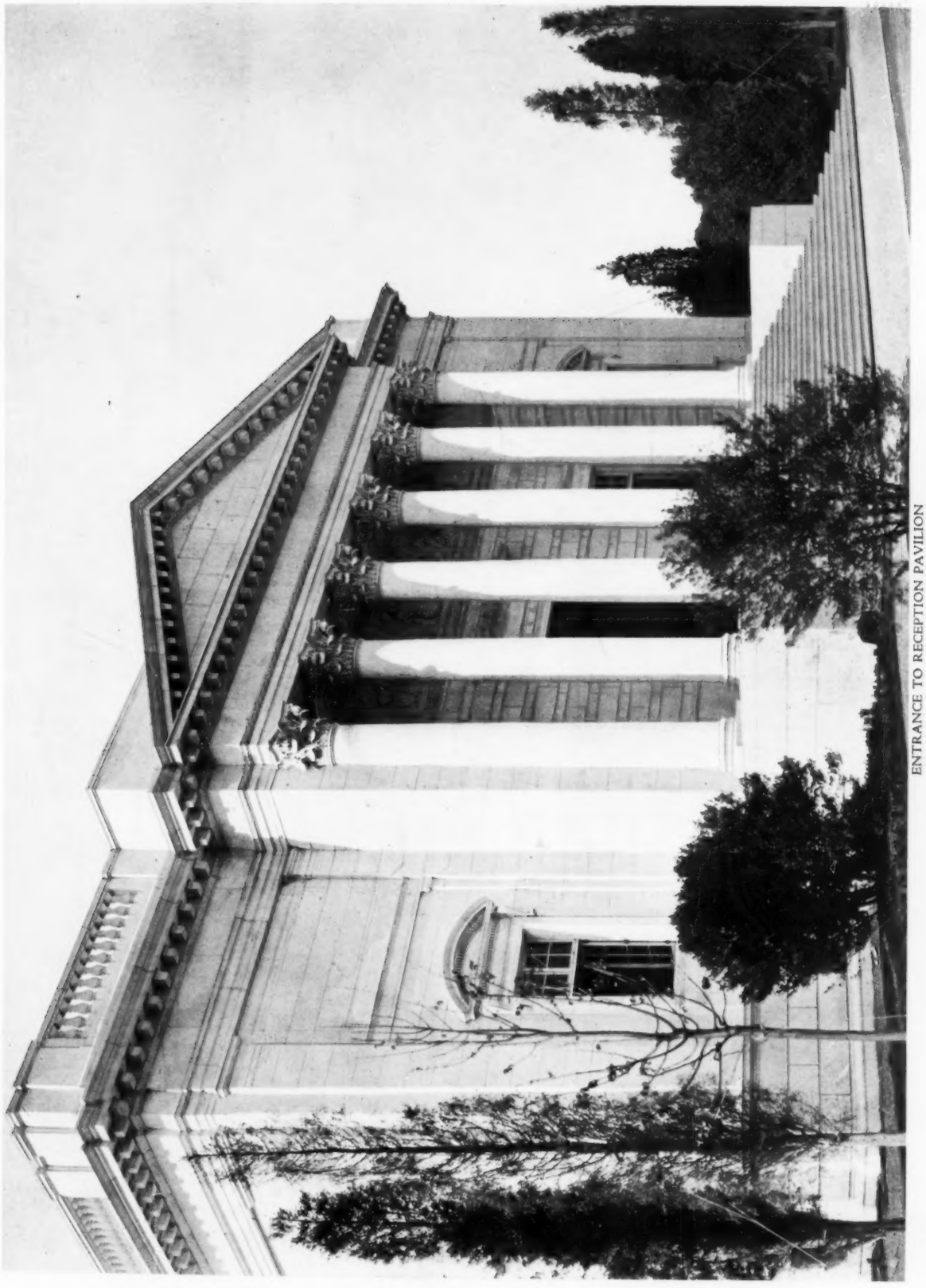
Particular care and thought have been given to the designing of appropriate details of metal wherever they occur in the form of grilles, lighting fittings and other accessories. An amphitheater, open to the weather and built almost wholly of marble, demands careful consideration of the resulting problems of drainage and an examination of the plans will show the provision of adequate drains in every part of the structure. Across each of the aisles there are several metal gratings covering drains, and other drains are provided for every four or five rows of benches in the amphitheater.

General View from the Approach

DETAIL OF SIDE ENTRANCE

MEMORIAL AMPHITHEATER, ARLINGTON, VA.

CARRÈRE & HASTINGS, ARCHITECTS



ENTRANCE TO RECEPTION PAVILION

MEMORIAL AMPHITHEATER, ARLINGTON, VA.

CARRÈRE & HASTINGS, ARCHITECTS

DETAIL OF STAGE

MEMORIAL AMPHITHEATER, ARLINGTON, VA.

CARRÈRE & HASTINGS, ARCHITECTS

INTERIOR OF RECEPTION HALL AND DOORWAY ON STAGE

MEMORIAL AMPHITHEATER, ARLINGTON, VA.

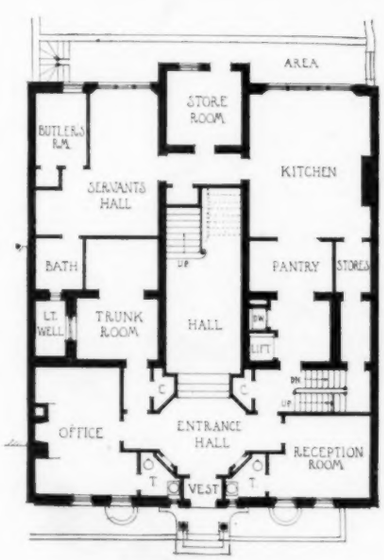
CARRÈRE & HASTINGS, ARCHITECTS

FRONT VIEW

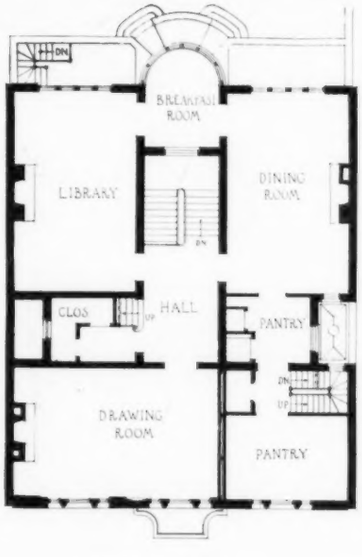
HOUSE OF EX-PRESIDENT WOODROW WILSON, WASHINGTON, D. C.

WADDY B. WOOD, ARCHITECT

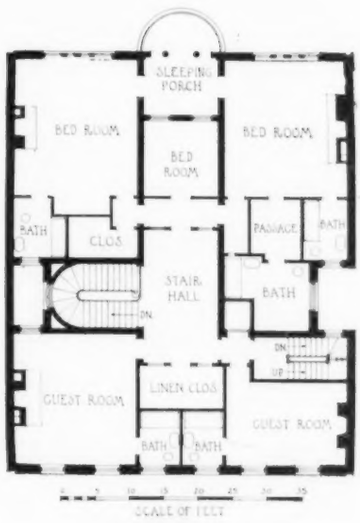
GARDEN VIEW



BASEMENT PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE OF EX-PRESIDENT WOODROW WILSON, WASHINGTON, D. C.

WADDY B. WOOD, ARCHITECT

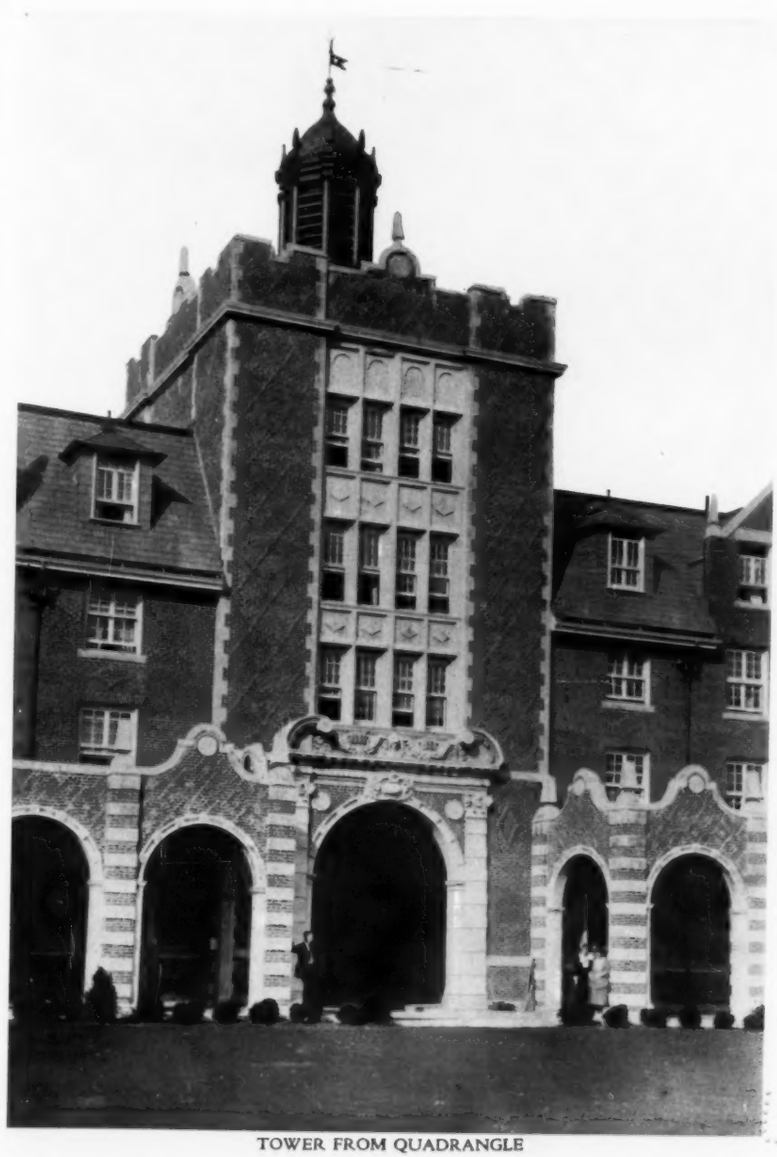
DRAWING ROOM

MANTEL IN LIBRARY

HOUSE OF EX-PRESIDENT WOODROW WILSON, WASHINGTON, D. C.

WADDY B. WOOD, ARCHITECT

TOWER FROM STREET

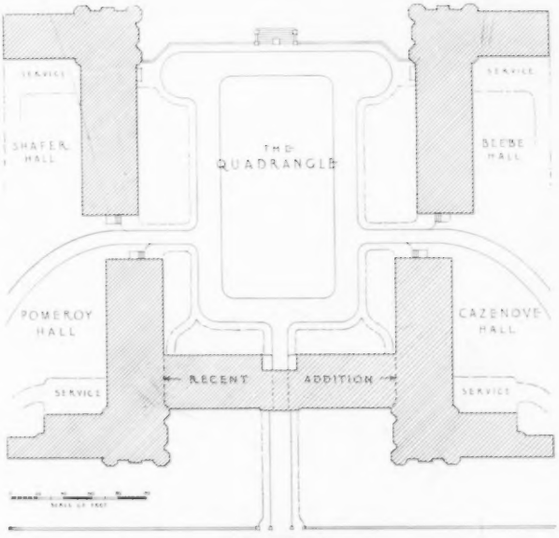


TOWER FROM QUADRANGLE

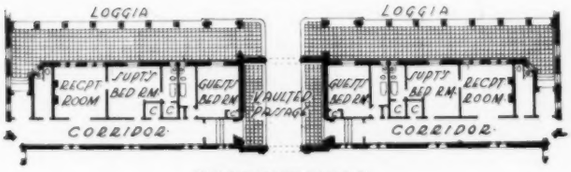
ADDITION TO DORMITORY QUADRANGLE, WELLESLEY COLLEGE, WELLESLEY, MASS.

J. A. SCHWEINFURTH, ARCHITECT

GENERAL VIEW FROM COURT



BLOCK PLAN



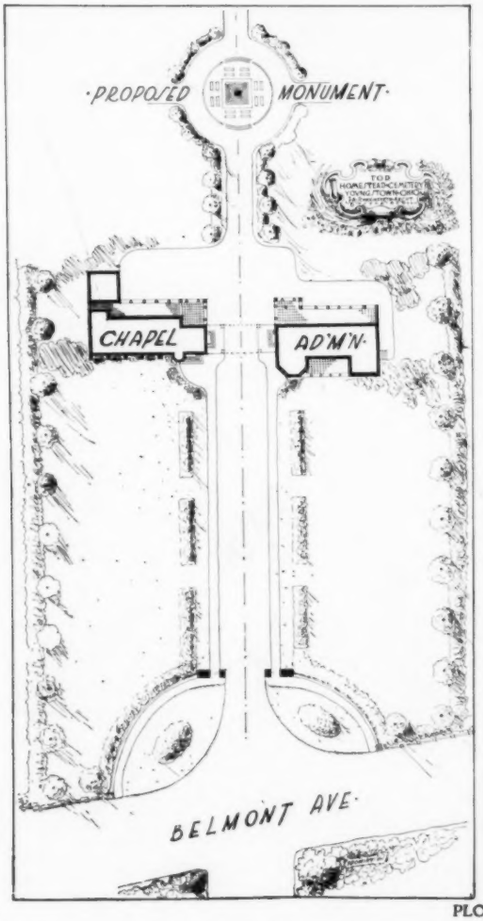
MAIN FLOOR PLAN

COURT ARCADE

ADDITION TO DORMITORY QUADRANGLE, WELLESLEY COLLEGE, WELLESLEY, MASS.

J. A. SCHWEINFURTH, ARCHITECT

GENERAL VIEW FROM APPROACH



PLOT PLAN AND TOWER DETAIL

GATE AND CHAPEL, TOD HOMESTEAD CEMETERY, YOUNGSTOWN, OHIO

J. A. SCHWEINFURTH, ARCHITECT

ENGINEERING DEPARTMENT

Charles A. Whittemore, *Associate Editor*

Terra Cotta Roofing Tile

PART II

By ALFRED LO CASCIO

FREQUENTLY in looking at houses with tile roofs we see indications of settlement and sagging in different parts, more especially around dormer windows. This opens up the flashing at points where water and snow can easily get in and cause damage to walls and ceilings. To obviate this difficulty it is quite essential to see that the frame for the roofing is properly arranged. This is true in materials other than tile, such as slate, and in this connection it may be well to suggest to architects that the roofing construction should be sufficiently tied across, with additional studs, braces, etc., so that the minimum depth of the rafters may be used, and still leave no opportunity for difficulties caused by sagging or settlement.

The Spanish tile weigh 950 pounds per square or 9½ pounds per square foot.

French (interlocking) tile weigh 925 pounds per square or 9¼ pounds per square foot.

Interlocking shingle tile weigh 900 pounds or 9 pounds per square foot.

6 x 12 x 3/8 shingle tile weigh 1150 pounds per square or 11½ pounds per square foot.

6 x 12 x 5/8 shingle tile weigh 1725 pounds per square or 17¼ pounds per square foot.

The Roman pan and roll tile weigh 1100 pounds per square or 11 pounds per square foot.

The straight barrel mission (half cylinder or concave and convex tiles) weigh 1200 pounds per square or 12 pounds per square foot.

For comparison with these figures the weights of slate roofing may be noted. The ordinary slates weigh 650 pounds (a little under 3/16-inch size), the 3/16-inch weigh about 750 pounds and the ¼-inch about 850, 3/8-inch about 950 pounds, ½-inch about 1000 pounds and 1-inch 1500 pounds per square. Any slates more than 1-inch thick, such as graduated and special thicknesses, are from 1500 to 1900 pounds per square. It is evident, therefore, that the weight of standard tiles as compared with the weight of the ordinary slates requires no special framing whatever and that the proper framing for slate is absolutely sufficient for tile, which is contrary to the general impression.

The usual rafter sizes to carry terra cotta tile are 2 x 7 or 2 x 8, 16 to 18 inches on centers. These sizes are used in almost all residential work and in a great many other buildings for the standard tiles. Of course for the extra heavy slab or graduated tile heavier rafters would be needed, which is also true for extra heavy or graduated slate.

The sheathing used over the rafters need not be tongue and grooved, as long as the boards are fairly even and laid closely, although the tongue and grooved sheathing makes a better job. The usual thickness of the sheathing is from 7/8-inch to 1-inch and it is not good construction to use cheap sheathing, uneven, irregular and with knot-holes, because difficulties may soon arise in connection with improper nailing. There must be something substantial to receive and hold the nails fastening

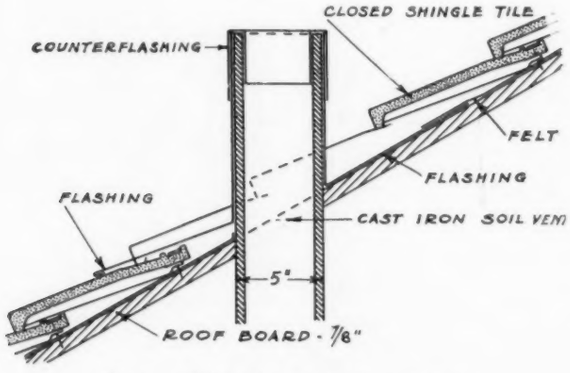


Fig. 10. Method of Flashing around Vent

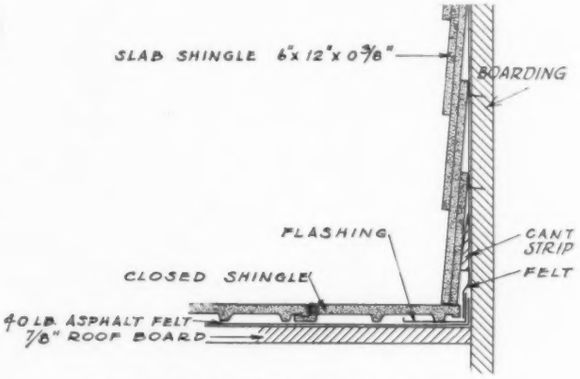


Fig. 11. Flashing for Perpendicular Slab Shingle

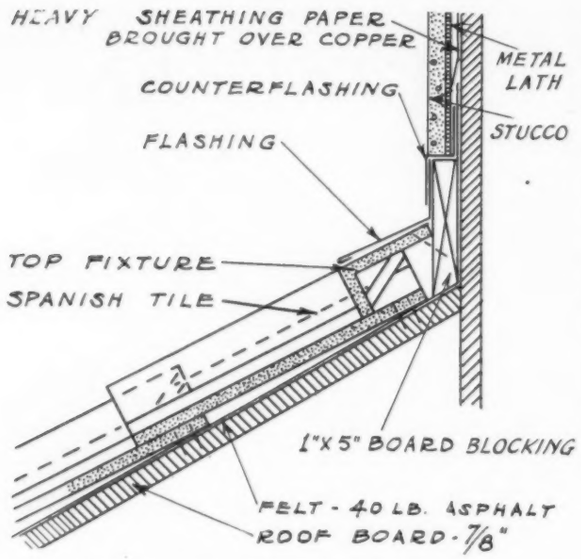


Fig. 12. Flashing Pitched Roof to Vertical Wall

the tile, and surely a knot-hole or wide spacing in the sheathing is not the right foundation.

It is not the purpose of this article to enter into a discussion of carpenter phases of tile work, but there are a few suggestions which are really important. The custom seems to prevail at the present time of having dormer studs run by headers and spiked through, instead of being halved on as in the earlier days. The result of this method of construction is that the weight of the tiles in the dormers is indirectly transferred to the nails and is carried only by them. This is obviously unfair in any type of construction, but more so where permanency is one of the chief assets, and in connection with roofs of first class construction it is important to see that the frame of the roof is not so constructed.

It has been found in the cases of large apartment houses that book tile may be laid, carried by light angles, over which is a layer of concrete, which has a characteristic of holding the nails securely. There are many types of material on the market at the present time answering this description.

Many real estate owners have found it to their advantage to eliminate altogether tar and gravel for roofing surfaces of certain structures, such as office buildings. Particularly is this true in large corporation buildings and department stores where the roofs serve the purpose of an exercise yard for the employes. In such cases it would be well to use flat quarry tile or a special flat shingle tile which can be bedded either in concrete or mastic or joints run in tar.

One point which frequently causes trouble is flashing around steam pipes, vent pipes, etc. which penetrate the roof surfaces. Fig. 10 shows a method of preparing this flashing and while it is indicated for a sloping roof with a board finish, the same general details would apply for flashing an all fireproof construction and also for all flat surfaces. It should be noticed that the apron flashing over the tile is carried up against the vents and it is essential that a copper flashing be placed over this and carried down. For this method, in place of the usual stock plumber's pipe showing a 10- or 12-ounce 10 x 12 copper flashing, it is better to use not less than 20 x 24 16-ounce soft roll copper or lead flash-

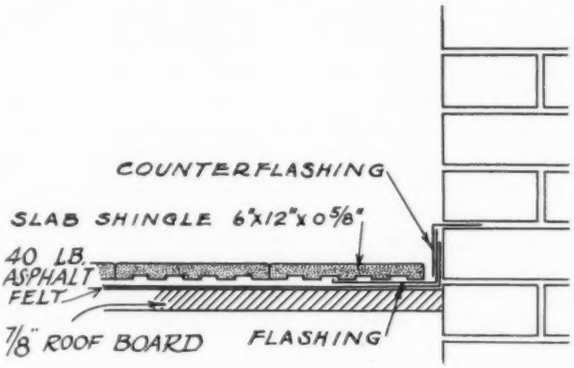


Fig. 14. Flashing Shingle Tile against Brick Wall

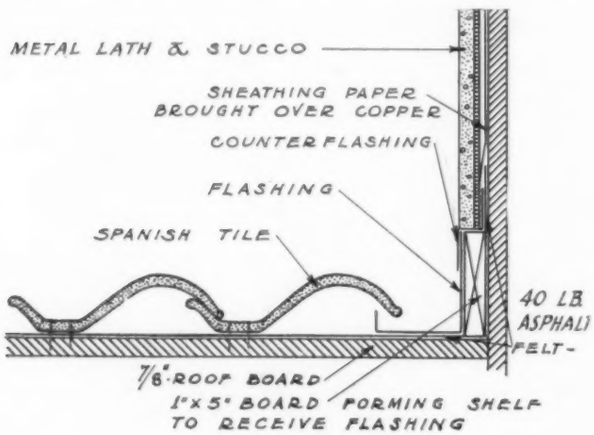


Fig. 13. Method of Flashing against Stucco Wall

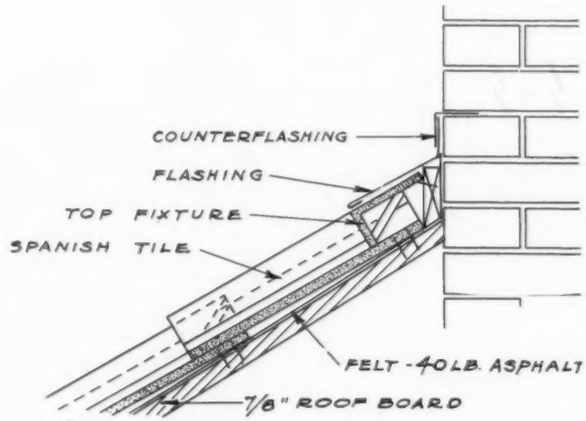


Fig. 15. Metal Apron in Brick Wall for Pitch Roof

ing. Lead is sometimes used to greater advantage in connection with a roll tile, as it is easier to mould around the tile than the copper. This, however, is not always true when flat shingle tile is used.

In a previous article the problem of flashing against the sides of dormer windows or vertical walls was taken up. Figs. 11, 12 and 13 show the accepted methods of flashing under these conditions.

Relative to this method of flashing there is a very simple but rather important process which is often neglected, that is the placing of roofing paper against the vertical wall before the wire lath and stucco are placed. This paper should come over on top of the counter flashing, so that if water should find its way through the stucco it would follow the lines of the paper over the flashing, whereas, if the flashing were placed against the paper, the water would naturally run down in back of the cant strip, causing a leak. Where the roof comes in contact with surfaces of different characters, expansion and contraction from heat and cold of the materials used must be carefully considered. In this connection counter-flashing and

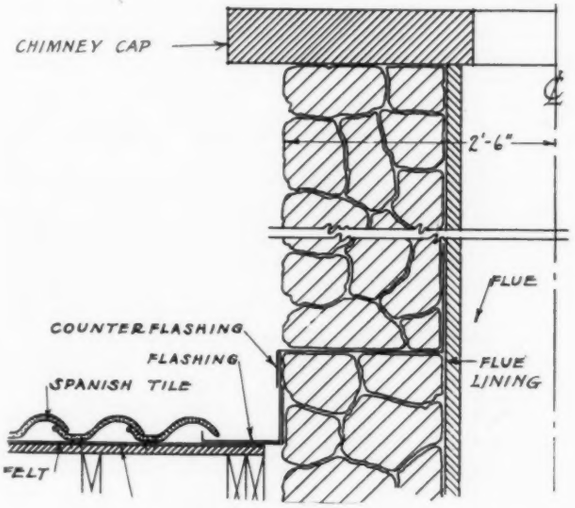


Fig. 16. Method of Flashing with Stonework

under-flashing should always, to secure the best results, be followed by double flashing. Figs. 14, 15 and 16 illustrate methods of flashing which will take care of expansion and contraction.

Fig. 16 also shows the construction of a chimney out of field stone, which is a very treacherous material with which to work. The counter-flashing should be carried through the stone and up against the flue lining and turned up in back of the stone, the remainder of the work being done in the usual way. If this arrangement is not carefully followed out, nine times out of ten the chimney will leak. Another point, which is frequently somewhat neglected, is the forming of the drip pan or flashing under dormer window sills. This is difficult when the flashing comes very close to the sills. Fig. 17

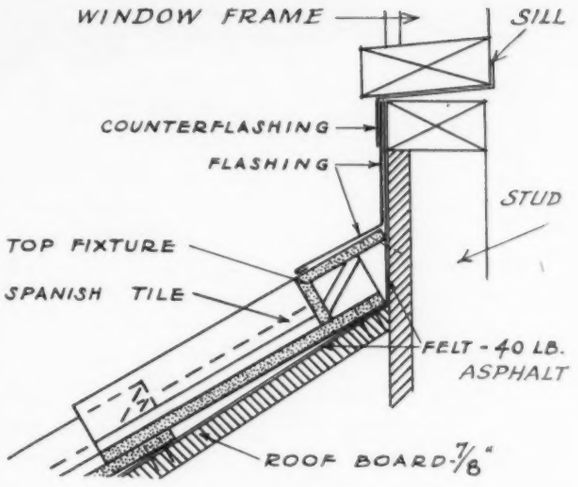


Fig. 17. Method of Flashing Dormer Window

shows a method which has proved its merit in keeping water out from dormer windows where the sills are too close to the roof. Counter-flashing should be carried across and turned up at the ends of the sills.

In connection with tile roofs, the question of handling water at the eaves of the sloping surfaces is one which has caused considerable annoyance. A remedy for this is the construction indicated in Fig. 18, which has a gutter suspended in such a manner that a heavy rush of snow or ice will pass over the top of the gutter. The strap of the gutter should be

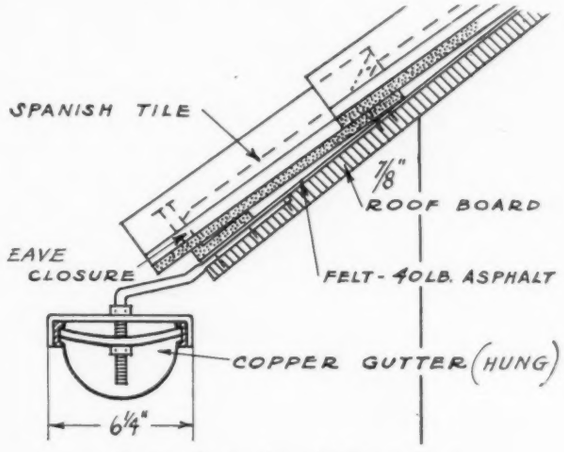


Fig. 18. Section through Gutter at Eaves

countersunk, flush with the roof board under the roofing paper. It is most essential to place gutters in such positions that they will receive the water from the roof in heavy rains or light rains, and special care should be taken to adjust the gutters to the conditions on each building. Some tile roofs require cant strips which are formed on tile-like eaves closures, which raise the valley or pan of the tile and great care should be taken in regard to the proper location of the gutter.

Truss Design and Details

PART V. THE SCISSORS TRUSS

By CHARLES L. SHEDD, C.E.

IN some buildings, especially churches, a form of wooden truss known as the scissors truss is frequently used. Figs. 19 and 20 show two forms of this truss. The heavy lines show compression members and the light lines show tension members.

The form shown in Fig. 19 is the more common. In this truss all members are made of wood except the small vertical in the center which is of metal,

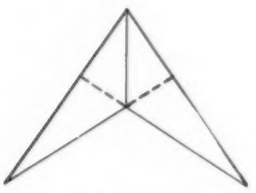


Fig. 19

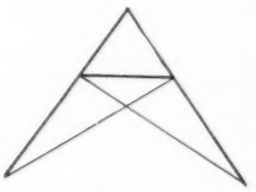


Fig. 20

usually a rod. Plates have to be used at the joints to develop the members. The detail of these joints is often rather difficult to design properly. When the only load on the truss is at the ridge, the members shown dotted have no stress to carry.

The form shown in Fig. 20 is made entirely of wood except the plates at the joints. If there were no shrinkage in the wood and if the joints were perfectly made it would act like any ordinary truss and have no thrust at the supports except that due to the wind and secondary stresses. In practice, however, there is more or less thrust developed at the ends, especially some time after the truss is built. If the truss is carried on the top of a wooden post or on the top of a high, thin wall serious trouble may develop a year or so after the building is erected. This trouble appears in a spreading of the walls and leaks in the roof. Such a condition may reflect on the reputation of the designer al-

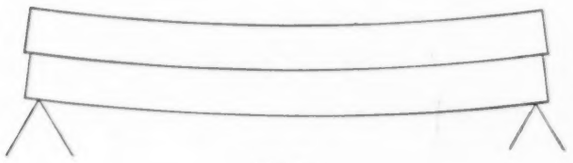


Fig. 21

though he may feel that he had designed the structure properly. He should therefore be careful not to use such a truss except where there are abutments in the walls of sufficient strength to resist any possible thrust which may come on them.

There is no doubt but that plenty of church roofs may be found with this type of truss and no provision made for thrust where the building has proved entirely satisfactory. However, the fact that one structure designed in a certain way has proved all right does not necessarily prove that every structure designed in this way will prove satisfactory. If, when reasonable care has been taken by the builder and the inspector, trouble occurs at times in a certain type of design, it is unsafe for the designer who values his reputation to repeat this type without taking proper precautions to guard against the trouble appearing in his structure. In other words, the designer should try to make his design "fool proof."

If one of these structures loosens in the joints there will also occur considerable bending in the wooden members due to what are commonly known as secondary stresses. This makes another point to guard against in the designing of this type of truss.

Deepened Beams

A previous article in THE FORUM described a common method of reinforcing a wooden beam known as the king post truss and the queen post truss. There are two other well known methods. One of these is formed by placing two beams on

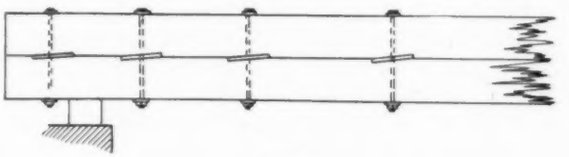


Fig. 22

top of each other. If they are placed in this way, but not fastened together, they will deflect into a form such as is shown in Fig. 21. Here it will be noticed that at the surface between the two beams they slip on each other. (Notice the positions of the ends.) In this case they will have a strength equal to the combined strength of the two beams which would be the same as if they were placed side by side. If, however, they are fastened together sufficiently so that they cannot slip when loaded they will have a much greater strength. If the sticks are of the same size the developed strength of the two sticks, fastened securely together, will be four times as great as one stick alone.

The first method which might occur to the designer for fastening these sticks would be to bolt

them together with vertical bolts passing through both sticks. This however will seldom, if ever, develop the maximum strength although it would add considerably to that of the timbers if used with no connection. The reason for this is that the bolts will bend and crush into the wood before the full strength of the sticks is developed.

It is therefore common practice to put keys between the two beams and then bolt them together as shown in Fig. 22. These keys may be made of wood, preferably of some hard wood such as oak, or of cast iron, wrought iron or steel. Those shown in Fig. 22 would be of steel or wrought iron. Oak blocks would be larger, with the sides parallel to the sticks instead of inclined. See Fig. 28. Cast iron keys are often cast in irregular shapes. In any case it is important that these keys be longer than they are thick. The thickness of the key is determined primarily by the bearing required on the end of the wood fibers to prevent the slipping. This bearing stress causes a twisting moment on the key which must be resisted by bearing against the sides of the wood fiber in a direction at right angles to the first stress. This stress varies in intensity from zero at the middle of the key to a maximum at the end, so that, due to this and to the fact that wood cannot resist pressure against the sides of the fibers as well as on the ends, the key must be of sufficient length to distribute this stress.

The tendency to slip is less toward the middle of the span if the load on the beam is uniform. If the load is concentrated this stress is the same at any point between the support and the first concentrated load. In Fig. 22 the keys are shown spaced farther and farther apart as the distance from the support increases, as would be the case for a uniformly loaded beam.

The Flitch Beam

The other method of strengthening a wooden beam is known as the flitch beam, shown in Fig. 23. In this case two or more wooden beams are placed side by side with metal plates between them. These plates may be made of steel, wrought iron or cast iron. As the allowable stress per square inch varies considerably for various materials and as the modulus of elasticity also varies it is not correct to add the strengths of the separate parts together to get the resultant strength of the flitch beam. Such a result would often be very different from the true strength which would be developed. The principle underlying this type of design usually appears to be obscure to anyone who has not had it explained and faulty assumptions may result if it is not clearly understood.

When we speak of the modulus of elasticity we mean the relation which the stress per square inch bears to the deflection. Thus, with hard pine if a certain beam deflected an inch there would be a certain stress per square inch in compression at the top of the beam, but if that same section were made of steel and loaded until it deflected an inch the stress per square inch in the same relative position would be very much greater. The allowable stress per square inch in steel is much larger than it is for hard pine, and if the ratio between these allowable stresses were the same as the ratio between the actual stresses with the same deflection then we could add the strengths of the different parts together to obtain the strength of the whole, but unfortunately these ratios are not the same. The result would be that if we took such a beam and started putting on the load a little at a time the allowable stress in one material would be reached before it would in the other. It is therefore evident that the safe load on such a beam would be reached when one of the materials had been stressed up to its safe amount.

This form of beam is not in such common use now as it was years ago, due largely to the fact that it is not usually an economical section. When this type is employed it is not necessary to use a metal plate in the middle but an I beam or two channels may be used facing each other with a wooden beam between them. The bolts do not resist any considerable stress but hold the different parts together and make them act simultaneously if it happens that the load is at first applied to one part more than to the others.

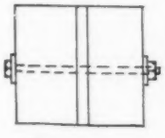


Fig. 23

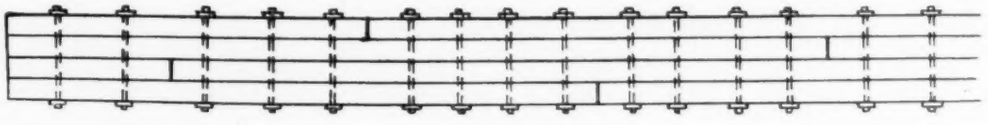


Fig. 24

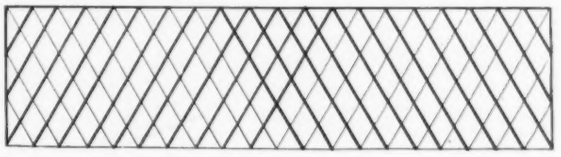


Fig. 25

Latticed Trusses

In Fig. 24 is shown a latticed truss. This is really in effect several trusses with chords in common. They are built of wood with the web members fastened to the chords by wooden pins or

bolts. It was quite common years ago to build this form of truss for bridges throughout New England and many of them are still standing on highways and railroads and are spoken of as "covered bridges." In these the web members passed between the pieces forming the chords and extended some little distance beyond them. This was to prevent the pins or bolts from shearing out at the ends of the web members. A source of weakness was often found in the end posts due to

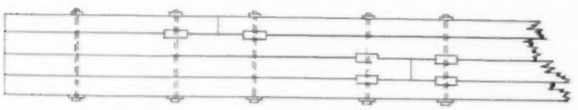


Fig. 26

bending caused by the stresses from the short web pieces which met on them. When the loads were light this form of bridge was very satisfactory. It was cheap, easily built with local labor, and any developing weakness was observed in such a wooden structure usually before it became dangerous, and could be repaired to make it safe.

During the late world war considerable notice was taken of this type of truss for roof construction. The chords could be curved or inclined and they proved to be a very satisfactory structure for a cheap, temporary building which could be erected with considerable speed and without labor of great skill. It appears to the author, however, that some architects have given undue credit to this form of truss, welcoming it as "a new type of design" and as "a type developed by the war and come to stay," all of which description appears to be an exaggeration of the true facts. The idea is not new, and therefore was not developed by the war, and the writer doubts if it has come to stay except in special construction where, after careful consideration of

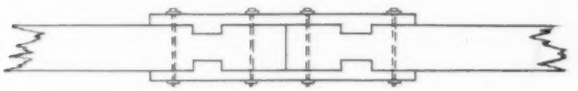


Fig. 27

the conditions and a complete understanding of the value of this type of truss, it is determined upon as the best to use. In some of these trusses which the author has noticed it has appeared to him from superficial examination that there existed a weakness in the fact that the web members were not carried a sufficient distance beyond the pins or bolts to provide against shearing out at the ends, as noted in the preliminary description of the old covered bridges.

Tension Splices

In wooden construction, especially trusses, it is at times desirable to splice a member which is subjected to tension. In our consideration of wooden trusses in previous articles it was noted that it was often cheaper to pay the extra for a longer stick than to make the splice if it were designed properly. However there are times when a splice is the proper thing to use. In trusses it is the bottom chord which may require splicing. If this chord can be made up out of several pieces, side by side, these separate pieces may sometimes be broken near the ends of the truss where the stress is not a maximum, and by staggering the breaks in the different sticks splices may be made which by the aid of bolts do not overstress the structure at any point. When it can be accomplished in this simple manner it would look something like Fig. 25.

It may here occur that the bolts are not sufficiently strong to resist the stress which they transfer, in which case we have to insert keys similar to those used in the deepened beam in which case the splices would look like Fig. 26.

These types of splice do not develop the entire strength of the sticks in any case—in fact it would be impossible to develop the full strength of any tension stick due to the loss of section from cuts or bolts. However, these splices described so far can be used to develop a small part of what the stick

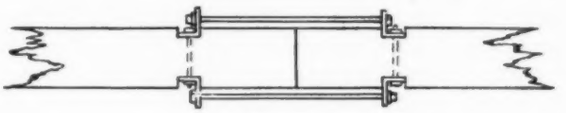


Fig. 28

could carry were it in one piece and the types shown in Figs. 27 and 28 can be used to develop still more strength.

In the case of Fig. 27 a splice is shown in which the material is entirely wood with the exception of the bolts. To reduce the size of the splicing material wrought iron or steel may be used in which case the lugs may be made of separate plates riveted to the long plate by countersunk rivets. The efficiency of the splice may be increased up to a certain point by increasing the number of lugs. The greatest efficiency can be reached when the material in the stick which is left between opposite notches is a maximum. Lugs should not be used less than ¾ inch thick and one inch is still better. The distances between the lugs and from the nearest lug to the joint should be at least 12 times the thickness of the lug.

A simple splice is shown in Fig. 28 composed of four short angles connected by bolts and bolted through the wooden sticks. Especial care should be taken to make the angles thick enough to resist the bending to which they are subject. The maximum efficiency of this type of splice is quite likely to be limited by the available thickness of this angle. This could be helped somewhat by angles running along the long bolts and so stiffening this outstanding leg of the short angles. The bending on the other leg might then be the limiting feature.

An endless number of splices might be designed but these described illustrate the basic principles.

MINOR ARCHITECTURE
EXEMPLIFIED IN MODERATE COST BUILDINGS

A City House Development of Greater New York

WALTER HOPKINS AND PHILIP RESNYK, Associated Architects

THE securing of the absolute maximum in value for the "irreducible minimum" of expenditure is, in well planned homes of moderate cost, worked out to a solution so successful that the utmost in area and equipment is had at the smallest possible financial cost.

Norwood Gardens is a development in which these results have been secured to an unusual degree. The selection of the location itself denotes the practice of efficient economy for it is in a district of Queensboro actually close to Manhattan, being almost opposite East 86th street, but hitherto neglected by builders owing to the lack of transportation service necessary for its development. The opening of new transit lines has brought this district to within 15 minutes' travel of 42nd street, at a five-cent car fare. Another detail in which economy of planning is evident has been the financing of the project, in all of its aspects, by one great financial institution, the Metropolitan Life Insurance Co., which has supplied the funds for building, making possible close prices on large quantities of material bought for cash, and which also furnishes the funds required for the permanent mortgages which many of the buyers of these homes assume. The price of a house in Norwood Gardens is $15,000, of which $1,500 is payable on signing the contract, $3,500 on delivery of deed and $10,000 covered by mortgages.

Planned and built by one ownership, results have been secured which give to the development a highly distinctive character which is attractive to a discriminating class desiring city residences of artistic design and good construction, in a restricted

View of Fifteen-House Block Showing Variation of Facades

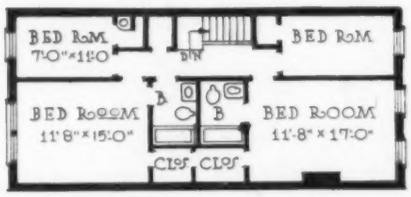
A Gabled Facade Used at Intervals in Blocks

locality and readily accessible from the business district of New York. The setting of the houses 25 feet from the street affords a clear space of 110 feet between houses on opposite sides, and 25 feet of this space on each side of the street is arranged in a continuous parked space which gives a well cared for appearance to the locality.

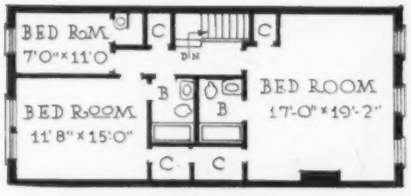
Behind these spaces, planted with grass and shrubbery, the facades of the houses appear to the greatest advantage, each with its brick-paved terrace across the front, edged around with a privet hedge. Wholly unlike the dreary brown stone fronts of an earlier day or the restless, incoherent buildings of a later period, these tasteful dwellings with their well ordered symmetry suggest homes in certain parts of London, for while the materials used are different, the effect of unified development is much the same.

The facades show a careful use of rough textured brick and cream colored stucco with roofing tiles for certain cornices and a moderate use of wrought iron and modeled terra cotta, while well selected colors for the shutters and other exterior woodwork heighten the distinguished appearance of the houses. The wide use of automobiles and constantly growing demand for garages, even in city houses, have resulted in a practical and economical solution. By giving up the ordinarily useless back yard of the city dwelling and throwing together all such areas a wide, open, paved space has been secured upon which there opens from each house a garage sufficiently large for two cars.

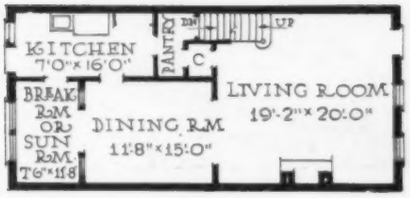
In planning the interiors of these houses there have been secured for them the sunshine, fresh air, spaciousness and the easy housekeeping features of more costly dwellings. In those houses from which the hall is omitted the entrance is directly into a living room 19 x 20, which alone covers about the area of a city apartment of two rooms and bath.



Alternative Second Floor Plan



Second Floor Plan



First Floor Plan

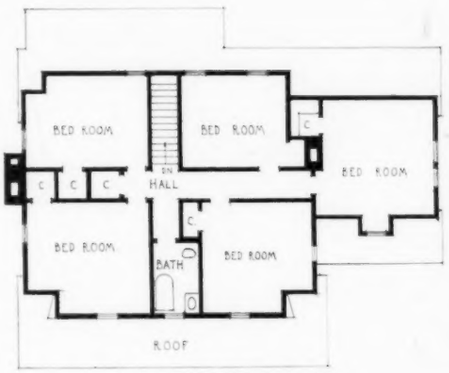
Typical Rear Detail Showing Basement Garage

FACADE TREATMENT OF TYPICAL HOUSES

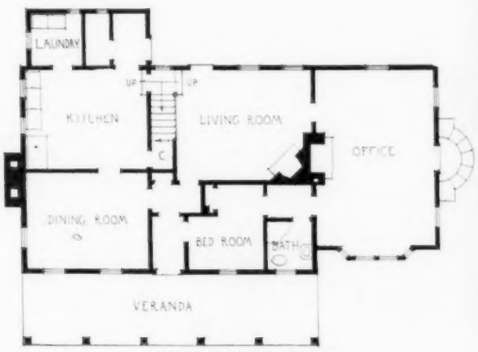
GROUP OF CITY HOUSES AT NORWOOD GARDENS, QUEENSBORO, N. Y.

WALTER HOPKINS, ARCHITECT FOR ELEVATIONS

GENERAL VIEW



SECOND FLOOR PLAN



FIRST FLOOR PLAN

OFFICE ENTRANCE

SUPERINTENDENT'S HOUSE AND OFFICE, AMAWALK NURSERY, AMAWALK, N. Y.

JAMES C. MACKENZIE, JR., ARCHITECT

VIEW FROM STREET

FIRST FLOOR PLAN SECOND FLOOR PLAN

HOUSE OF R. W. LANGLEY, ESQ., NEW HAVEN, CONN.

C. F. TOWNSEND, ARCHITECT

DECORATION & FURNITURE

Jeanne Taylor, *Associate Editors*, Leland W. Lyon, R.A.

Interior Decoration Commissions

BUSINESS METHODS SUCCESSFULLY EMPLOYED BY ARCHITECTS

I. Utilizing the Services of a Professional Purchaser

AS explained in the January issue there are three practical methods by which an architect may handle an interior decoration commission. The application of these methods depends partly upon the intricacy and size of the project and partly upon the architect's personal inclinations. These several methods may be briefly reviewed.

1. On a complex problem it may be well to advise the employment of a skilled interior decorator, usually of the type maintaining an extensive stock of reproductions, antiques and modern decorative materials. In carrying out this method the decorator works with the architect and owner.

2. This method involves the handling of the complete transaction by the architect alone.

3. Sometimes another plan may be preferred, and this method involves the handling of the operation by the architect engaging an interior decorator as a professional purchaser to carry out details of buying, matching samples and carrying on business transactions with manufacturers and dealers.

This is the first of three brief articles which will outline the application of the various methods here described, and the subject for present consideration is the third method, by which the services of a professional purchaser are employed to carry out the details under the architect's guidance. We may first consider the business relationship to be established between the architect and the client, and between the architect and the interior decorator who is to act as professional purchaser and adviser on details. We have three elements to consider: first, the commission which the architect should receive; second, how the interior decorator is to be paid; and third, the provision of a comprehensive service which will be satisfactory to the owner.

The architect's commission under this method of operation is usually 10% of the total expenditure involved. This is paid directly by the owner and covers these various details:

Interior design and general specifications.
Obtaining of estimates through the interior decorator.
Supervising the purchases and work of the decorator.
Checking costs and generally protecting the interests of the owner.

The decorator, being essentially a contractor, is paid no fee but is allowed the trade discounts which result when the owner pays retail prices. In some instances the decorator allows cash discount percentages which vary in accordance with the transaction but which serve to reduce the cost somewhat from the owner's viewpoint. The trade discount which the decorator receives may average 25% or more, but as he (or she) has not only to carry the financing of the transaction until the owner makes payments, but has also a large amount of detail work to carry out, this is but a fair return.

The architect, in consultation with the owner, develops the general interior room schemes. The work of obtaining samples and prices on paper, fabrics, furniture, fixtures and equipment of every kind is then turned over to the professional purchaser who, having a thorough knowledge of the market, will soon assemble the necessary data so that the architect may show samples to the owner or take the owner to various shops to inspect furniture and other decorative units.

The price schedule is prepared by the professional purchaser and is checked by the architect. When approved by the owner this entire scheme is put into operation, purchasing of necessary quantities is commenced and sub-contracts are made for papering, painting, decorative tile work, interior woodwork and similar details. These contracts and purchases are approved throughout by the architect and while the carrying out of the project is followed closely by the interior decorator, supervision is also provided by the architect.

This method of handling an interior decoration project is particularly applicable to the architect's office where there is not sufficient work to maintain a regular department, and where the services of someone who knows the market may be required in order to expedite the work and to relieve the architect of the laborious details involved in obtaining samples of materials and prices on furnishings of numerous kinds. It is therefore evident that the selection of an individual competent to carry out this work is important, and if an architect has not already been in contact with someone who is capable of doing this work, it may be that information is obtainable through other architects' offices or by inquiry among members of the wholesale decoration trades.

It is interesting to note that this class of interior decorators is made up almost entirely of women, which is probably a natural development based on the feminine instinct for shopping. The relations between the architect and interior decorator of this class should be entirely open and frank, insofar as a knowledge of the discounts received by the decorator may be concerned. There should be definite co-operation to protect the interests of the owner and to avoid the natural tendency of the decorator to purchase where the most favorable discounts are allowed.

Handling the Business Details

At best the business features of a project of this nature are complex, and while it may seem that the decorator's discount is at times large, it must be noted on the other hand that on many of the items involved the discounts are so small that usually they balance to no more than a fair total payment for the time and painstaking effort required on the part of the professional purchaser. Fundamentally, both from ethical and sound business viewpoints, the architect who is paid a commission on this type of work by the owner is not entitled to receive any share in the profits of the decorator, or any special discounts which are not immediately credited to the owner's account.

In many of the letters which we have received from architects on this subject it has been said that the usual charge in handling an interior decoration commission is 10%. There have been complaints that this is not sufficient to place this part of the work on a paying basis. If the architect handles all details of a project of this kind himself, without the aid of a professional purchaser, this condition is true, for the amount of time involved in gathering details is so great that in the end the architect will have nothing more than the satisfaction of carrying out his ideas through the entire project in building and interior design. In itself this reward to the average architect is of great importance, and many firms carry out the details of furnishing and decoration for this alone. On the other hand, it is evident that the payment of a fee by the owner constitutes sound business policy, and that he receives a definite service from the architect for this payment. Accordingly, the architect who may carry out a scheme in the manner just described will avoid much of the detail work, and consequently a 10% fee will show him a profit.

It may be noted at this point also that the Furniture and Decoration Department of THE ARCHITECTURAL FORUM has now developed a service through which it is in a position to recommend professional purchasers of good standing who are willing to co-operate in every way with the architect in carrying out a project under this plan. Or, if architects located at various points which may be out of touch with the furniture and decorative material markets developed in important cities wish the co-operation of local purchasers, this can also be arranged.

The question of securing a professional purchaser who will work efficiently in the interests of the owner and harmoniously with the architect offers some difficulties. Assuming that such a relationship has not as yet been developed, the architect will seek the services of someone who has good general knowledge of this market and the ability to purchase carefully. Experience is requisite which at least qualifies the purchaser as having accurate knowledge of fabrics and equipment and of furniture quality and styles. There are many individuals, usually women, who possess these qualifications and who are available for co-operation with the architect. Elaborating somewhat on the business features involved, it will be found that these decorators work either on their own accounts, as contractors, or directly for the account of the architect as agent for the owner.

Complex trade conditions provide issues which must be met squarely by the architect. Some furniture, decoration and equipment houses will deal directly with the architect, allowing discounts which he in turn credits to his client. Others will not deal with the architect on this basis but will allow such discounts to the decorator who retains these amounts in payment for services. Usually such discounts require payment of the bill within a limited period of time. As an instance, the case may be cited of one dealer who allows to the decorator a discount of 20% if the bill is paid in ten days. Evidently the decorator is forced to see that the bill is paid within this time—or else lose the commission. Consequently, if the decorator is not financing the project throughout (as a contractor) and collecting in turn from the owner, arrangements should be made for prompt payment.

A Typical Commission

The practical manner in which this condition may be met may be demonstrated by outlining a typical project recently handled under this plan. This project involved the complete furnishing and equipment of a new dwelling. A schedule with a few sketches was prepared by the architect, covering the house room by room. This schedule was not in detail but gave a general outline of decorative and furnishing requirements with approximate costs per room. After revision and approval by the owner, detailed requirements were given by the architect to the decorator. Material samples and furniture were assembled, one room at a time, for the owner's final approval. Actual cost tabulations were provided at the same time and upon approval of each room the owner drew a check to the architect's account as agent, covering all items. The architect was thus placed in a position to pay all bills immediately and to check against the cost figures provided by the decorator. This plan worked out to the satisfaction of all, the decorator was placed in a position to allow some cash discount to the owner and the project proceeded smoothly to completion.

Furnishing of Community Buildings with Limited Funds

THE CHESTER CLUB, CHESTER, PA.

CLARENCE WILSON BRAZER, ARCHITECT

THERE can be no doubt that several phases of war work, particularly those involving community betterment in the districts where soldiers were quartered, have contributed definitely to the development of interior decoration under limited expenditure. The ingenuity of architects and decorators was called upon for the furnishing and decoration of community buildings constructed by Y. M. C. A., War Camp Community Service, Knights of Columbus and similar organizations. As never before public interest has been developed in the subject of inexpensive club and community buildings for varied purposes—as war memorials, for industrial employes, and for purely social activities. It is but natural, therefore, that many architects will be called upon to supervise or carry out work of this nature.

A clever solution of such a problem, and one which may furnish valuable suggestions, is to be found in the recently constructed Chester Club at Chester, Pa., designed by Clarence Wilson Brazer under whose direction furnishing and decoration has been carried out. The Chester Club, while it is a private club, is to be used for various city functions, receptions and similar community activities.

Owing to the necessity of limiting the expenditure to a moderate sum the idea of using specially designed furniture was immediately eliminated. The architect made interior sketches of typical rooms, indicating the furniture requirements and drawing on information contained in the catalogs of several manufacturers and furniture makers. He then invited dealers, who carried the most suitable lines, to submit prices. After carefully checking prices, orders were placed taking into consideration not only reasonable prices but quality of workmanship and design of the stock materials and furniture. This work, therefore, represents an assemblage from the stocks of several firms but through all the rooms there has been maintained the harmony necessary with a well designed building. The colonial spirit is accentuated without the sacrifice of comfort. There is no overfurnishing, neither is there to be found the meagerness which might have resulted owing to the limitation of expenditure. The Windsor chair, which has gained much popularity for its comfort and artistic value, is used extensively throughout the club. The lighting fixtures of black iron and brass have been adapted from the designs of old lamps used in colonial days.

A successful method of handling the purchase of

The Lounge Looking toward Library

Ladies' Dining Room Adjoining Main Dining Room

furniture and decorative materials, which is often employed in connection with large projects where quantities of furniture are required, may be of interest to architects facing a similar problem. In the instance of the Chester Club sketches of rooms, together with specifications, were submitted to several firms on a contract basis in much the same manner in which an architect would begin the placing of a sub-contract in a building operation. Definite price quotations were received on the basis of the specifications and contracts placed.

One architect, who has handled many large furnishing commissions in connection with buildings which he has designed, has very successfully developed this purchasing method. If he requires 400 or 500 dining room chairs for a restaurant, he places a contract directly with the furniture factory to produce the chairs in unfinished form, a separate contract being let for finishing, painting, staining and varnishing. This architect usually selects a typical chair from stock, and sends to the factory for the shop drawings. Slight changes are then made in his office, such as the turning of the legs or arms, or the form of the chair back, and a new shop drawing is prepared to accompany the order, thus achieving a distinctive result at small increased cost over the usual stock chair.

With upholstered pieces, the order is often placed with this office for the necessary wooden framework and a separate contract is made for upholstering, the necessary covering material being furnished.

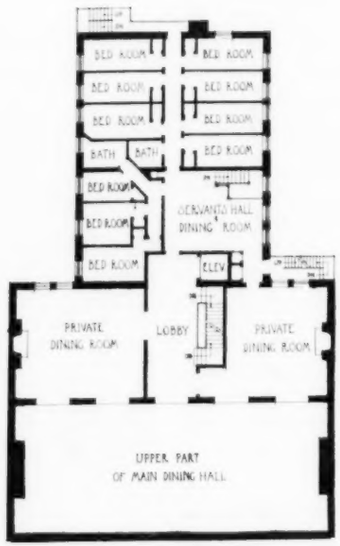
Several of the large department stores which maintain extensive furniture departments are always interested in supplying furniture and decorative materials on a contract basis.

Main Dining Room on Second Floor

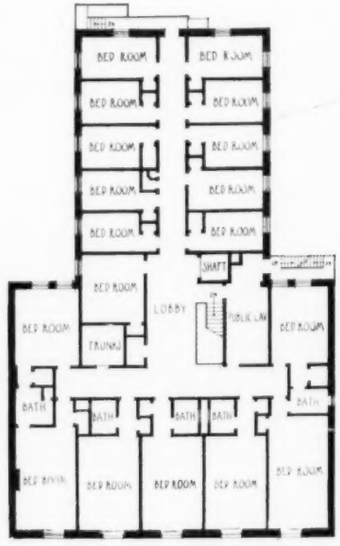
RECEPTION ROOM

CHESTER CLUB, CHESTER, PA.

CLARENCE W. BRAZER, ARCHITECT

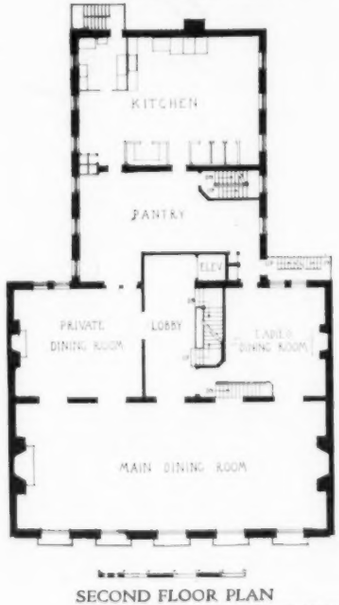


THIRD FLOOR PLAN

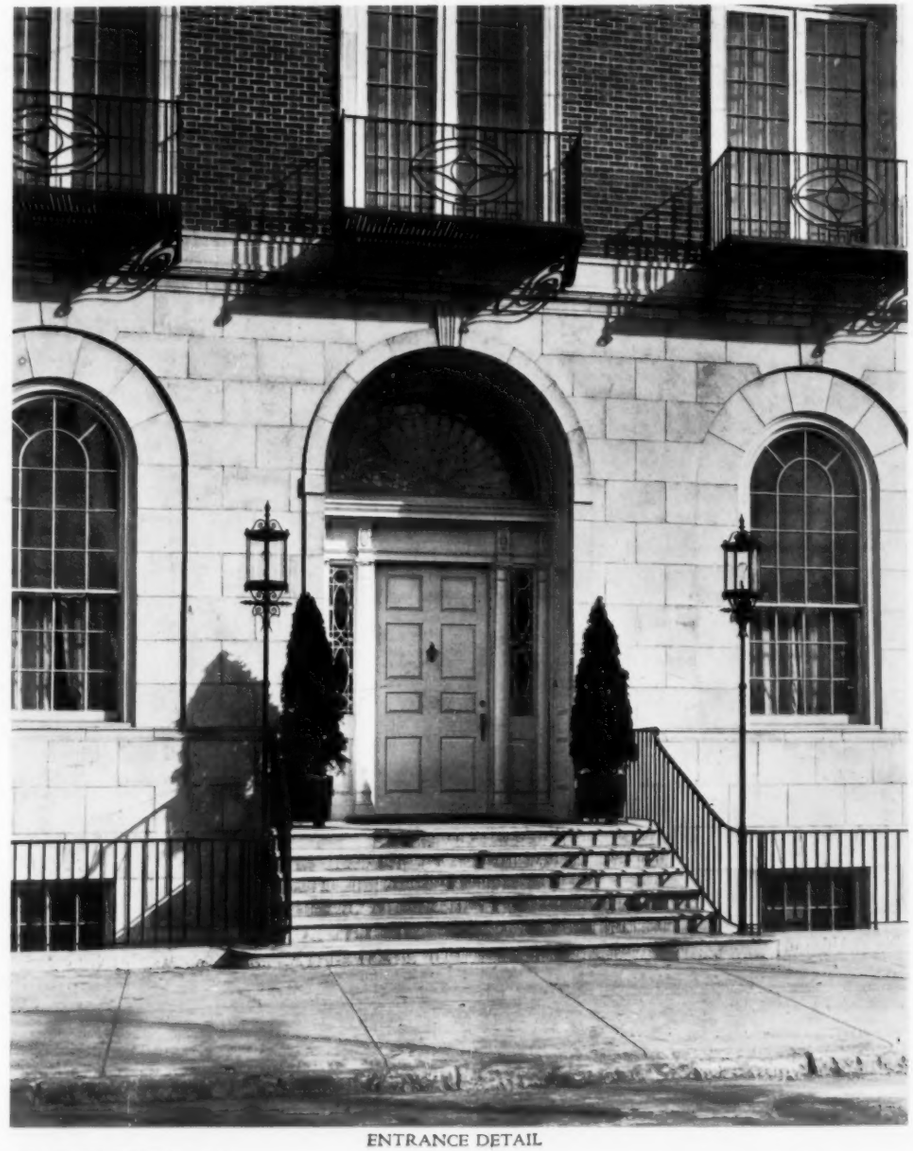


FOURTH FLOOR PLAN

FIRST FLOOR PLAN



SECOND FLOOR PLAN



ENTRANCE DETAIL

CHESTER CLUB, CHESTER, PA.

CLARENCE W. BRAZER, ARCHITECT

BUSINESS & FINANCE

C. Stanley Taylor, *Associate Editor*

Business Aspects of a Successful Co-operative Apartment Development

DURING the past few months there have been received in the office of THE ARCHITECTURAL FORUM a great many inquiries regarding the business methods of developing co-operative apartment house projects. A number of these inquiries have asked for definite information regarding a successful individual project of this nature.

After a careful analysis of various developments of this type we have selected that known as the Jackson Heights Development of The Queensboro Corporation as being representative of a co-operative housing project based on sound business principles. Many of the co-operative projects which have been successfully developed heretofore have been of the very expensive type involving partial occupancy by owners and the renting of the remainder of the space in the building. In the Jackson Heights Development, however, the apartments while attractive in design are moderate in cost, and consequently will be of more general interest to those who contemplate such developments in various sections of the United States and Canada.

In the January, 1919 and July, 1920 issues of THE ARCHITECTURAL FORUM there were shown a number of illustrations of the architectural and building details of this development. This article will, therefore, be confined entirely to describing the business factors involved.

In order that the development of the Jackson Heights project may be clearly understood we give a brief description of the method of organization. In this development there have already been constructed approximately 60 apartment buildings, accommodating from 12 to 24 families each. Two companies were formed. One was a land company which owns a large tract of approximately 350 acres, located directly across the East River from the central business section of New York and having excellent transportation facilities by subway, elevated railroad and the Pennsylvania Railroad. The second was a building and holding company which purchases land as needed for construction from the land company. This may be considered the original owning company and the first important principle involved in this operation is that the buildings are completely constructed before stock is sold to the individual tenant. This in itself is an unusual feature as in most co-operative developments the tenants provide financing from the plans and make agreements to purchase before the building is constructed.

In reading later paragraphs of this article it must, therefore, be kept in mind that the original owners are in reality speculative builders, and that they operate according to a plan here briefly outlined.

Financial Organization

The land is purchased from the land company and an architect is commissioned to draw plans. A building loan and first mortgage is arranged on each building, usually with a bank, trust company or the loaning department of a life insurance company. The buildings are constructed through the purchase of materials and the placing of sub-contracts directly by the owning company. After a building is completed, so that its exact cost is known, the owning company adds its legitimate profit to establish a definite selling price for the entire building. The difference between the first mortgage and this selling price, or in other words the equity amount, becomes the amount of capitalization of a co-operative tenants' corporation which is to own this individual building and which is limited by the terms of its charter to the ownership, maintenance and improvement of a specific plot of ground and the building thereon. This provision is made to prevent any chance of speculation with the corporation money.

Having in this manner incorporated the equity in the building, stock is offered for sale to prospective tenants. The amount of stock purchasable depends on the number of rooms contained in the apartment which the tenant proposes to occupy. Under this plan all apartments are occupied by stockholders. There is a considerable difference at this point, however, between the principles of this operation and those of the average co-operative development. In the first place, the ownership of stock involves only a right to occupancy of the specific apartment on yearly lease by the original purchaser. This lease is renewable annually as long as the stockholder wishes to occupy the apartment. Each tenant-owner pays a monthly rental to his own corporation which is established approximately on the prevailing rental value and is to

cover interest, taxes and maintenance cost, the balance being paid out again in the form of a dividend which is paid in cash or, if the apartment has been bought on an easy payment plan, this dividend amount is credited to the tenant-owner's amortization account.

Details of a Typical Investment

In order to demonstrate clearly the exact financial operation of this transaction we give a complete financial outline of a typical purchase in any one of these buildings. The transaction is thus described:

A conservative first mortgage has been placed on the building, averaging approximately $800 per room. A purchaser of this typical five-room apartment pays approximately $10,500 on an easy payment basis. Of this amount, at the rate of $800 a room, $4,000 is in the form of a first mortgage, leaving an equity of $6,500 which he must pay. He is only called upon to provide $2,000 in cash, leaving an unpaid contract balance of $4,500.

The tabulation here shows how this $4,500 is paid off. It will be noted that the monthly payment of $134 is fair market value for an apartment of this class, but out of this amount $35 is directly credited as an installment payment, and the dividends out of the monthly rental of $99 are credited to the account of the tenant-owner. Thus in the fourth month of the seventh year, after paying a normal rental over this period and enjoying all community advantages, he is the owner of a valuable equity.

Equity	$6,500	Monthly rental	$ 99
Cash	2,000	" installment	35
Contract	$4,500	Total monthly	$134

With an initial cash payment of $2,000—monthly rental of $99 and monthly installment of $35 on contract—and crediting the estimated dividends on the equity at 7%—the entire stock equity will be paid in six years and four months.

	Installments		Estimated dividend @ 7%		Gross credit		Interest (deduct from gross credit)		Net credit	Total credit on contract end of each year
1st year	$420	+	$455	=	$875	—	$270	=	$605	$605
2nd "	420	+	455	=	875	—	234	=	641	1,246
3rd "	420	+	455	=	875	—	195	=	680	1,926
4th "	420	+	455	=	875	—	154	=	721	2,647
5th "	420	+	455	=	875	—	111	=	764	3,411
6th "	420	+	455	=	875	—	66	=	809	4,220
4 mos. of 7th year	140	+	152	=	292	—	5	=	287	4,507

These credits, with the $2,000 initial payment, will pay in full the stock equity of $6,500. After the equity is paid, monthly cost is:

Rental	$99.00
Dividend (estimated at 7%)	37.92
Net monthly cost	$61.08

A feature of this plan is an agreement whereby all stock purchased is held by the original owning company for a period of five years. This avoids the necessity of placing a second mortgage on the property and as this owning company (as just explained) has a contract to manage the property, it is evident that if it does not so manage that the dividend is 7% as estimated, it in turn must have its money tied up over a longer period. Consequently the management contract is doubly safeguarded from the purchaser's viewpoint, as the managing Corporation not only works in general for the tenants' benefit but employs every reasonable effort toward economy.

All apartments are occupied by stockholders with the provision that if a stockholder finds it necessary to move he may give notice in July and vacate the apartment October 1 of any year. He is no longer liable for the rental and while he still maintains his stock ownership and receives dividends accordingly the apartment is actually rented to a tenant by the owners' corporation of which his stock ownership is a part. Conversely, stock ownership other than the original purchase does not carry with it a right to occupy an apartment. The stock owner may sell his stock to whom he pleases at any price he can get, but the new purchaser of the stock must receive the approval of the owners' committee before he can personally occupy the apartment in question.

When the stock of an individual building has been sold the title to the land and building passes to a company composed of the tenants. The Queensboro Corporation makes a contract to manage the building for a period of ten years with an option on the part of the tenant-owners to renew for a like period. As this organization has had extensive experience in management and has large purchasing power it is quite evident that such management will be more efficient than an amateur attempt at building management by a committee of tenants. Experience has shown that tenants are invariably satisfied with this arrangement. With entire management of the various buildings sold under this plan it is possible for The Queensboro Corporation to maintain excellent community conditions, which is of course highly desirable because of the extensive ownership of land and buildings in this vicinity by the original owning organization.

From the Tenant's Viewpoint

The advantages from the tenant's viewpoint in connection with this plan of co-operative development may be briefly summarized:

A tenant-owner is protected against an increase of rent, and he obtains in semi-annual dividends all earnings above the actual fixed charges and operating costs of the building, which, based on present costs of operation, are estimated at 7% on the amount he invests in the building.

The tenant-owner is protected against undesir-

able neighbors because he is a director of his own corporation and has a voice in their selection, and because the leases of the apartments are not assignable without the consent of the Corporation and its agent. The tenant-owner may surrender the lease of his apartment at the end of any year, on proper notice, and still retain his investment in the building.

Tenant-owners have equal rights in all activities, such as tennis courts, golf courses, community club, children's playgrounds and community gardens. He is eligible for membership in any of the community activities, subject to the rules of each separate organization. Each tenant-owner is his own judge as to what activities he desires. He may join all or none. There is no solicitation, and no assessment unless he participates.

Details of this plan, as outlined by Edward A. MacDougall, President of The Queensboro Corporation, at the recent Bridgeport Housing Conference, and quoted here, may bring out added points of interest.

Ownership and Incorporation. Each apartment building is owned by a separate company capitalized for the amount of the equity, whereof the entire stock is held by the stockholders in proportion to the number of rooms occupied by them, and all apartments in a given building have been leased to stockholders of such corporation for their own personal occupancy.

Mortgage. There is but one mortgage on each building, usually held by a savings bank or life insurance company.

Title. Title to the land and building passes to the company composed of the tenants. Each tenant-owner subscribes for an amount of stock which is proportioned to the size of the apartment which he occupies, and each tenant-owner may become a director in the corporation owning the building.

Terms of Payment for Purchase of Stock. After 20% cash has been paid on the stock subscription, the balance may be paid in monthly installments over a period of years.

Management. The Queensboro Corporation makes a contract to manage the building for a period of ten years, with an option on the part of the tenant-owners to renew for a like period. The Queensboro Corporation has managed apartments for many years and is enabled to effect the greatest possible economy. The fee for this service is the usual 5% of the rentals collected.

The Lease. With the purchase of his stock, the tenant-owner leases the apartment he has selected from his own corporation. This lease automatically renews itself from year to year. Should he

Example of Typical Unit in Apartments at Jackson Heights, Long Island, N. Y.
George H. Wells, Architect

Typical Floor Plan of Apartment on Page 113

wish to vacate for a year or more he may surrender his lease any October 1 by giving notice on or before the previous July 1. His liability for the rent then ceases and the apartment is leased to someone else.

Each tenant-owner signs the same form of lease. Leases are not transferable, which prevents undesirable persons from obtaining possession of an apartment. This is one reason why, under the Jackson Heights plan of tenant-ownership, the stock ownership and the lease are separated.

Rent. Each tenant-owner pays a monthly rent to his own corporation at the prevailing rental value for the premises occupied, which rent is fixed and cannot be raised without his consent. Gas and electricity are metered separately to each individual apartment and are paid for by the occupant. Garage accommodations are paid for by each individual user.

Sale of Stock by a Tenant-Owner. There is, of course, no restriction upon the sale of his stock by a tenant-owner, but such sale of stock would not carry the right to the buyer to occupy an apartment. Unless the buyer conformed to the standard of tenancy set by the Corporation, he could not lease an apartment.

The seller has the right to set his own price for the sale of his stock. If desired, The Queensboro Corporation will endeavor to sell his stock for him, charging the customary commission.

The Directors. Each tenant-owner is a director of the tenant-owner corporation, and it is the declared policy of the directors of the Corporation to divide all surplus earnings over and above the cost of operation, fixed charges and amortization. These earnings are estimated to average about 7% per annum on the investment.

Dividends. The Queensboro Corporation, as agent for the tenant-owners, collects the rent and makes all the disbursements on account of the operation of the building. The balance is a surplus which is available for dividends, which under the by-laws can be declared from time to time by the directors of each corporation. Apart from the duty of the tenant-owners as directors of the corporation of meeting twice a year to declare a dividend, they are relieved from all burden and care in connection with the management of the building. The tenant-owner is living in his apartment at the actual cost of running the building, and all rent paid in excess of this actual cost comes back to him.

Reduction of the Mortgage. The mortgage is reduced annually by a sinking fund taken from the monthly rentals paid in by the tenant-owners. The mortgage is thus gradually reduced and paid during a period of years. The rentals also pay all the operating expenses of the building, such as taxes, insurance, heat, janitor service, mortgage interest, light of public halls, water rentals, maintenance and repairs.

Limitation of Each Corporation. By the terms of its charter, each corporation is limited to the ownership, maintenance and improvement of a specific plot of ground and the building thereon. This provision prevents any chance of speculation with the corporate money. Each corporation elects its own officers, but no officer receives a salary.

Taxes and Assessments Paid. The sale price of each building includes all taxes and assessments

Planted Plot between Blocks Showing Garages

Typical Floor Plan of Apartments on Page 111

paid to the time of passing of the title. The price includes also the paving of the street on which the building is located.

Some of the inquiries received by THE ARCHITECTURAL FORUM request information as to the rights and interests of tenant-owners in case the building is destroyed by fire or otherwise. It is evident that under this plan the ownership in the land and all other net assets lies jointly with the tenant-owners. In estimating net assets it must of course be realized that the holders of mortgages have a claim to full satisfaction from the returns of insurance payments.

Another question which has been asked is what will prevent any tenant from obtaining 51% control of the stock of the company. It is quite evident that nothing will prevent the acquisition of such control as far as owning a large percentage of the issued stock is concerned, but as this control can neither change the rentals of any apartments under the stock selling agreement, nor make it possible for the owner of the "controlling stock" (so termed) to introduce objectionable tenants or any features contrary to the agreement under which the stock was originally sold, it is evident that there is nothing to be gained by obtaining actual stock control.

It may be noted also that this investment by a tenant-owner is principally for the purpose of maintaining a reasonable rental and that from his viewpoint it is not a speculative investment. The only manner in which the building could be placed in the speculative market for re-sale would be through an agreement by all tenant-owners or by the outright purchase of all stock in the holding corporation.

APARTMENT buildings in the Jackson Heights Development contain no rear apartments in the usual acceptance of the term. Such apartments as do not face the streets look into inner courts or open spaces which are made of unusual size by placing together the courts of two adjoining structures. The exteriors of the buildings on the sides facing the courts are built of the same material as the street fronts and the courts themselves are made attractive with parked spaces, planted with grass and shrubbery. Upon the wide paved areas which surround these parked spaces open the garages which are features of these buildings.

The fronts of the buildings are being worked out to present an appearance of architectural unity. There are no radical differences in height, and variations in material and certain details of exterior design will prevent monotony of appearance.

Type of Unit Developed in Apartment Buildings at Jackson Heights, Long Island, N. Y.
George H. Wells, Architect

EDITORIAL COMMENT

ENCOURAGING HOME BUILDING

THERE have been under discussion during the past two or three years many proposed methods by which the housing shortage could be relieved. These have been of interest to the architectural fraternity as potential factors tending toward an increase in the volume of building construction. The methods and effect of practical measures which have recently been put into force in various sections of the country are, therefore, well worth consideration.

Through its approval by the Board of Aldermen of New York a realty tax-exemption measure now becomes a law, offering special inducements to those who have built, or will build, residence structures between April, 1920 and April, 1922. This measure provides for an exemption of real estate tax up to $5,000 on the appraised valuation of each individual dwelling or each apartment in a multi-family structure over a period of ten years from the time of completion. Based on a tax rate of $2.85 this means a direct saving of approximately $1,400 per unit which will help to offset any depreciation of replacement value which may occur during the next few years.

The practical effect of this measure was reflected in the real estate news of New York within one day after its final approval. A number of real estate transactions involving the purchase of recently constructed apartment houses, which had been held pending action by the Board on this measure, were consummated. Several large speculative building organizations, which were offering a number of newly constructed dwellings and moderate cost apartments on the co-operative basis, were able to advertise that a $1400 saving could now be enjoyed by purchasers of their offerings. It is particularly interesting to note that in the co-operative apartment house developments of The Queensboro Corporation, which are completely described in the Business and Finance Department of this issue of THE ARCHITECTURAL FORUM, it is now possible to reduce the owner's rental approximately $10 a month because of this tax-exemption.

Immediately upon the passing of this measure the number of inquiries from prospective home owners and home builders increased extensively and, judging by inquiries for vacant residential lots and reports from some architects' offices, it would seem that the amount of residential construction in New York during the period covered by tax-exemption would be enormously increased.

With the precedent set in New York there is no reason why this question of tax-exemption on new buildings of the residential class should not become a live subject in every community in the United States. The definite saving which is offered through a measure of this kind can be easily appreciated by prospective home builders and purchasers, and as it represents from 10 to 15% saving on the cost of the dwelling it will undoubtedly appeal to an investor of this class. From the viewpoint of the city or community this tax-exemption does not represent a great amount. On the other hand, it means an increase in the total appraised valuation of real property which in turn reflects beneficially on city credit. It means also the increment in general land values where new communities may develop, adding again to the tax revenue. It means a practical method of relieving a local housing shortage.

In discussing the question with a prominent official closely connected with building loan institutions, we have been definitely assured that a tax-exemption of this nature will tend to encourage more liberal financing of dwelling construction as it reduces the danger, supposed or actual, of deflation in collateral valuation. Above all, such a measure has a direct effect in restoring public confidence in the building situation. It would seem, therefore, that architects everywhere have an opportunity to sponsor local action of this kind which is certain to follow if sufficient public pressure can be exerted.

The effect of a general demand by the public for increased consideration on the part of banking institutions regarding building and permanent loans on dwellings is being felt at various points in the country. The reduction of the volume of commercial credits and unusual investment opportunities is bound to be reflected in the mortgage loan field, particularly in view of an average reduction in cost, approximately 20%. Here again architects may exercise a certain influence in following more closely the local building loan situation. We are told that throughout the East building loan associations are placing every available dollar and using all their credit capacity in making loans for dwelling construction. At any point in the country where this is not the case, there seem to be logical arguments now why building loan associations should become particularly active. On behalf of his clients it will pay an architect to study the methods and operation of building loan associations and to maintain his contact with them as well as with mortgage money sources.

From the building field we have the information that contractors are now able to give closer figures, owing to the fact that the labor situation is better. A definite schedule of reduction in labor costs has been adopted by the Building Trades Employers in Chicago and at other important points.

The entire situation is one which offers many opportunities for architects to contribute, sometimes indirectly, to the efforts now being made toward the stimulation of building activity, for we are on the verge of an indeterminate period in which every individual effort is of value.

In the final analysis, all arguments in favor of Raymond Concrete Piles come down to the basic factor of certainty—the protecting steel shell is left in the ground.

Raymond Concrete Pile Co.
New York, 140 Cedar Street
Chicago, 111 W. Monroe Street
Raymond Concrete Pile Co., Montreal, Can.
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A FORM FOR EVERY PILE

A PILE FOR EVERY PURPOSE

Manufacturers' Catalogs and Business Announcements

CATALOG REVIEW

ATLANTIC TERRA COTTA COMPANY, 1170 Broadway, New York, N. Y.

"Questions Answered" (5¼ x 7½ ins.). 32 pp.

The production of terra cotta is more or less of an enigma to those who have not been initiated into the fictile arts. To promote a wider knowledge of terra cotta in the field of construction and design this little book presents a score or more of major questions which are fully answered in an orderly manner. In making clear certain points, there are included a number of illustrations which have been chosen for their helpfulness—some of the best known examples in their line appearing. Besides being a valuable collection of information this is an attractive piece of booklet making.

CRANE COMPANY, South Boston, Mass.

"Homes of Comfort" (5½ x 8½ ins.). 100 pp.

In the science of sanitation the Crane line has become widely recognized. This book of theirs serves as a partial catalog to those who are about to build or remodel a home, and only such fixtures for bathrooms or kitchens are shown as would be particularly adaptable. Several model bathrooms or combinations of installations are pictured so that it will not be difficult to visualize the most up-to-date appointments. Toward the back of the book are found small specialties and general kitchen equipment together with fittings supplied in connection with other devices. There are nearly three hundred illustrations, each with complete explanation.

C. A. DUNHAM COMPANY, Fisher Bldg., Chicago, Ill.

"The Dunham Hand Book" (3¾ x 6¾ ins.). 144 pp.

A working guide of universal appeal is the compact book issued under the above title. While it passes over the Dunham heating specialties in an introductory manner, necessary information for their use is given. The greater part of the contents is taken up with data of a very practical nature from tables and formulae, standard symbols and diagrammatic layouts to estimating and calculation. Outlines of steam heating systems with a glossary of terms used by engineers furnish the architect with a comprehensive idea of the principles of erecting and testing a plant. The amount of matter compiled is deserving of praise and should make a definite place for this work among the books used for planning layouts.

Advice on Acoustics

GEORGE C. HANNAM

Acoustical Engineer

1400 Broadway - - New York, N. Y.

ANNOUNCEMENTS

Mr. Francis J. Taylor, architect, formerly architectural engineer in the office of the Mechanical Engineer for the Bethlehem Shipbuilding Corp., Ltd., announces the opening of offices at 216 E. Lexington st., Baltimore, Md. Manufacturers' samples and catalogs requested.

(This was incorrectly printed in the February issue as Mr. Joseph J. Taylor.)

Mr. C. Howard Crane, Detroit, Mich., announces the opening of an office at 562 Fifth avenue, New York, N. Y. under the direction of Mr. E. M. Mlinar, formerly with Thomas W. Lamb, New York City. Manufacturers' samples and catalogs requested.

Mr. Hugh T. Keyes announces the opening of an office at 425 Murphy Building, Detroit, Mich. for the practice of architecture.

Mr. Leonard Schultze and Mr. S. Fullerton Weaver, C.E. announce the formation of a partnership for the practice of architecture under the firm name of Schultze & Weaver with offices in the Elliman Bldg., 17 East 49th street, New York, N. Y.

ROTCH SCHOLARSHIP EXAMINATIONS

THE preliminary examinations for the Rotch Traveling Scholarship will be held at the office of the Secretary, C. H. Blackall, 20 Beacon street, Boston, on Monday and Tuesday, April 11 and 12, 1921, at 9 A.M., to be followed by the sketch for Competition in Design on Saturday, April 16. The successful candidate will receive annually for two years an amount which it is hoped will not be less than $1,400 per year, to be expended in foreign travel and study during two years.

Candidates must be under thirty-two years of age and must have been engaged in professional work during two years in the employ of a practicing architect resident in Massachusetts. Holders of a degree from a recognized architectural school may present their certificates in lieu of the preliminary examinations. Candidates are requested to register at the office of the Secretary as long before the examinations as practicable.

M. I. T. SCHOLARSHIPS

TWO scholarships of three hundred dollars each are offered in the scholastic year of 1921-22 for special students in the fourth year of the course in Architecture at the Massachusetts Institute of Technology. They will be awarded as the result of a competition in design under the direction of the Committee on Design of the Department of Architecture.

The competition is open to citizens of the United States of good character, who are between twenty-one and twenty-eight years of age, and who have had at least three years' office experience. Competitors must, however, present satisfactory evidence of a knowledge of descriptive geometry.

The competition will be held in July, 1921. Competitors are allowed to prepare their drawings wherever conditions conform to the requirements of the Committee, but these drawings must be sent to Boston for judgment.

Applications should be received before May 1, addressed to Professor William Emerson, 491 Boylston street, Boston, Mass.